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PAPER TRADE JOURNAL

Reg. U. S. Pat. Off.

Vol. LXXXV, No. 19 NOVEMBER 10, 1927 Per annum $4.00 Per Copy 10 Cents

As Evidence —
The Record of Our Machines

Extract from a letter of

The Brompton Pulp & Paper Co. Limited dated October 12th, 1927.

"The Machine was purchased from Charles Walmsley & Company, on March 26th, 1926—and the construction of the buildings was commenced on May 1st, 1926. The first merchantable Newsprint was shipped from the Mill on January 28th, 1927—and the average daily production for the past eight months is as follows:—

February	53.6	Tons
March	87.	"
April	97.4	"
May	99.	"
June	101.7	"
July	104.6	"
August	107.8	"
September	106.4	"
and October up to date	108.6	"

We would point out that this Machine is operated entirely on 32 lb. Standard Newsprint."

Charles Walmsley & Co. (CANADA) LIMITED

Works
Longueuil, Que.
Canada

Office
Montreal, Que.
Canada.

Great Northern Paper Co., East Millinocket, Me. 36,500 sq. ft. of Armstrong's Corkboard, 2 inches thick, were laid on the roof of the paper machine room.

Cork Insulated Roofs Reduce Ceiling Sweat

INSULATING the roof with Armstrong's Corkboard gives you better control of the ceiling sweat nuisance. In most cases, Armstrong's Corkboard, in adequate thickness, prevents ceiling condensation entirely, and even under the worst conditions reduces it to a point where it is far less troublesome and easier to handle.

Not only is cork insulation on the roof the most *effective* remedy for ceiling sweat, but it is also the most practicable. It attacks the trouble at its source, for by reducing heat loss through the roof it keeps the ceiling temperature above the dewpoint. Armstrong's Corkboard can be easily laid on any roof, wood, concrete, or metal, flat or sloping, new or old. Roofing is laid in the usual manner right over the corkboard.

Free Engineering Counsel

Armstrong Engineers have been dealing with this problem of condensation in paper mills for many years. The results of their experience are available to you without cost. Write to them, describing your problems. Address Armstrong Cork & Insulation Company, 217 Twenty-fourth Street, Pittsburgh, Pa.

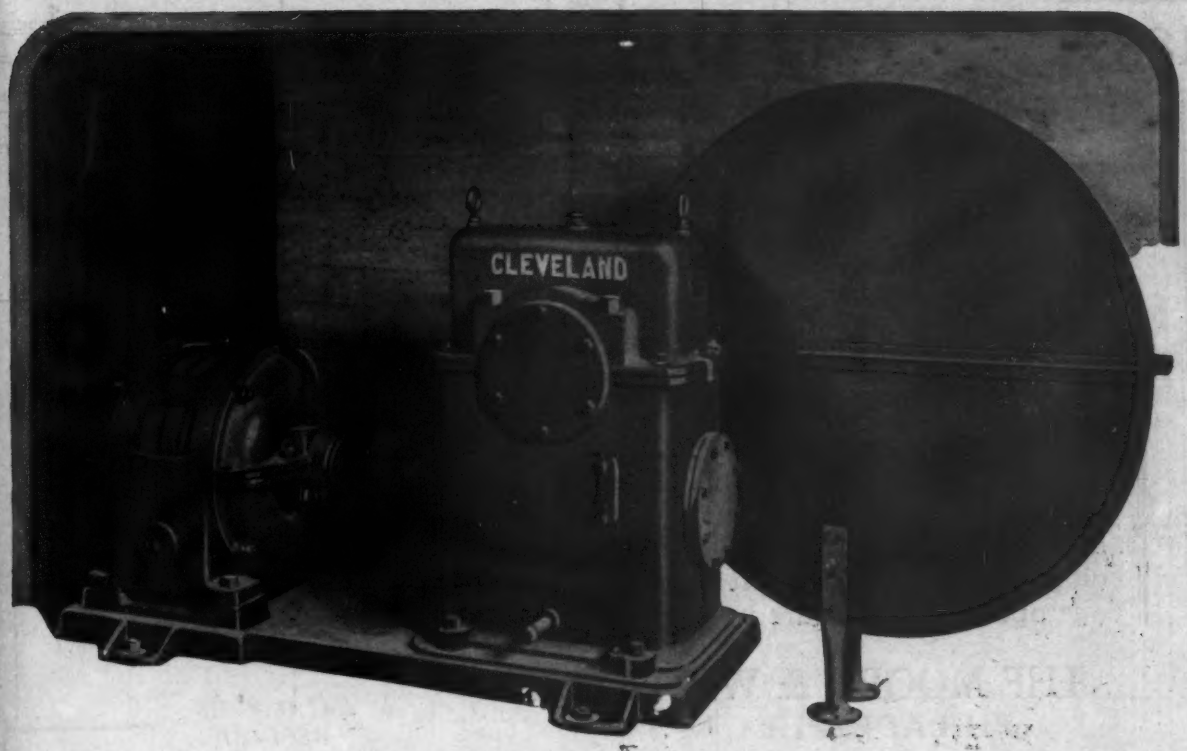
Send for this Book

A copy of this book should be in the hands of every mill executive and engineer. It contains valuable data on the subject of condensation. The book will be sent free. Write for "The Insulation of Roofs to Prevent Condensation."

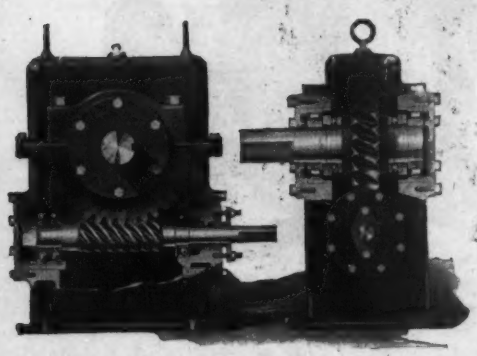
Armstrong's Corkboard Insulation

for the Roofs of All Kinds of Buildings

Entered as second class matter August 13, 1925, at the Post Office at East Stroudsburg, Pa., under Act of Congress of March 3, 1879. ESTABLISHED 1872 FIFTY-SIXTH YEAR Published every Thursday by the Lockwood Trade Journal Co., at 34 N. Crystal St., E. Stroudsburg, Pa. EXECUTIVE AND EDITORIAL OFFICES: 10 EAST 39th STREET, NEW YORK CITY. CHICAGO: 123 West Madison Street, Chicago, Ill.



You Would Appreciate This Drive on Your Agitators



The standard type AH Cleveland unit is designed to carry an overhung sprocket or pinion on its gear shaft without an outboard bearing. Nevertheless, all shafts are mounted in anti-friction bearings—a necessity for a long-lived worm gear.

It consists of a standard type AH Cleveland Worm Gear Reduction Unit, mounted on a substantial baseplate with the driving motor and connected to the agitator shaft through supplementary spur gears.

The arrangement was planned by a leading firm of paper mill engineers and is one of seven drives recently installed in a large new Canadian mill.

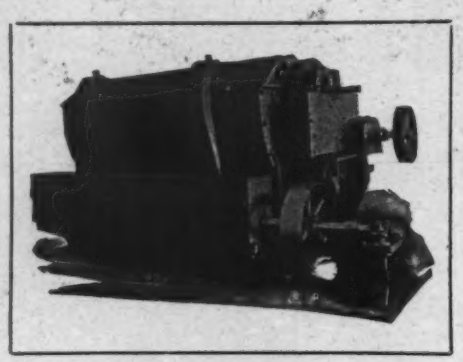
Investigate the Cleveland worm gear drive if you want low maintenance costs and uninterrupted service. Send for bulletin 106.

- CANADIAN AGENTS -
Peacock Bros., Ltd., 1605 Delorimier Ave., Montreal, P. Q.

CLEVELAND
WORM & GEAR COMPANY

3291 EAST 80TH STREET CLEVELAND, OHIO

1885



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"Moore & White" Screens produce quality paper whether used on Tissues, Kraft, Roofing Manilas or Book Paper. Lumps and slime spots are eliminated. Breaks on paper are thus prevented and continuous operation is assured.

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PHILADELPHIA, U. S. A.

CATALOG ON REQUEST

1927

That's Real Service

"Only an hour ago I wired Diamond to rush a car of Alkalies. Here's their wire in reply saying they are shipping it right away and even giving me the car number and routing. Now that's what I call Service."

With convenient warehouse stocks in all the larger cities for less than carload buyers, together with the centrally located Diamond Plants at Painesville, Ohio directly served by three trunk lines, you reap the benefit of our unsurpassed shipping facilities and wide distribution.

Why not get acquainted with Diamond Alkali service—and Diamond Quality?

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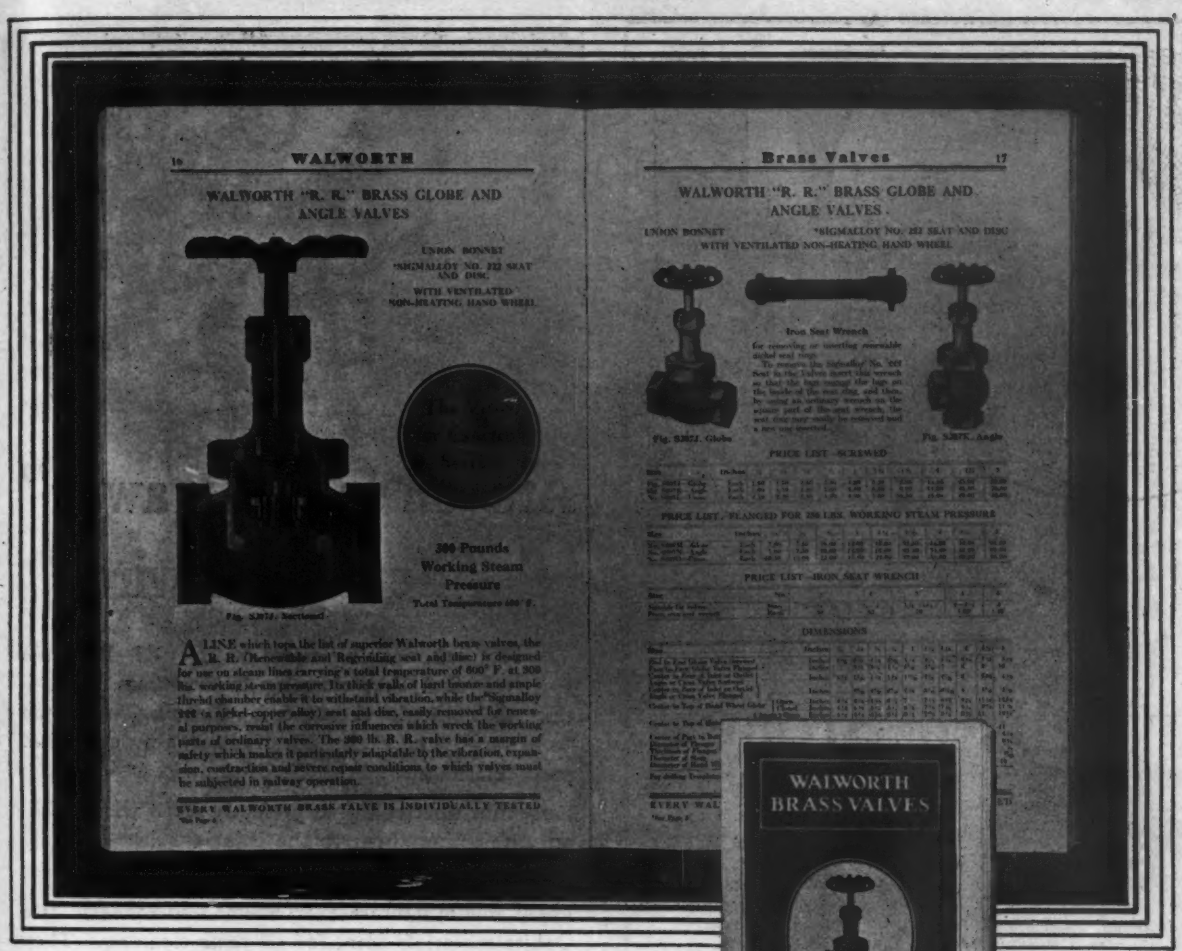
Diamond Alkali Co.

Pittsburgh, Pa.
and everywhere!


16 WALWORTH
WALWORTH "R. R." BRASS GLOBE AND ANGLE VALVES
UNION BONNET
*SIGMALLOY NO. 222 SEAT AND DISC
WITH VENTILATED NON-HEATING HAND WHEEL
300 Pounds Working Steam Pressure
Total Temperature 600° F.
Fig. 5267. Sectional
Brass Valves 17
WALWORTH "R. R." BRASS GLOBE AND ANGLE VALVES
UNION BONNET
*SIGMALLOY NO. 222 SEAT AND DISC
WITH VENTILATED NON-HEATING HAND WHEEL
Iron Seat Wrench
Fig. 5267. Globe
Fig. 5267K. Angle
PRICE LIST—SCREWED
PRICE LIST—FLANGED FOR 250 LBS. WORKING STEAM PRESSURE
PRICE LIST—IRON SEAT WRENCH
DIMENSIONS
WALWORTH BRASS VALVES

Send for a copy.

All you need to know about Brass Valves

WHERE to use brass valves . . . where not to use them . . . the difference between bronze and hard bronze . . . what Sigmalloy No. 222 is recommended for . . . all these questions are clearly explained in the new Walworth Brass Valve Booklet.

In addition, this booklet gives you all the details of the design, dimensions and prices of Walworth's line of High Grade Brass Valves, covering pressures from 125 lbs. to 300 lbs. at temperatures ranging up to 600° F. Sectional drawings, in color, show the working parts of superior valves, built for exacting service. This book also contains further data on all the valves that Walworth makes, including brass, iron, steel iron and Walworth Sigma Steel.

You will want this useful new book for your files. Your request will bring a copy by return mail.

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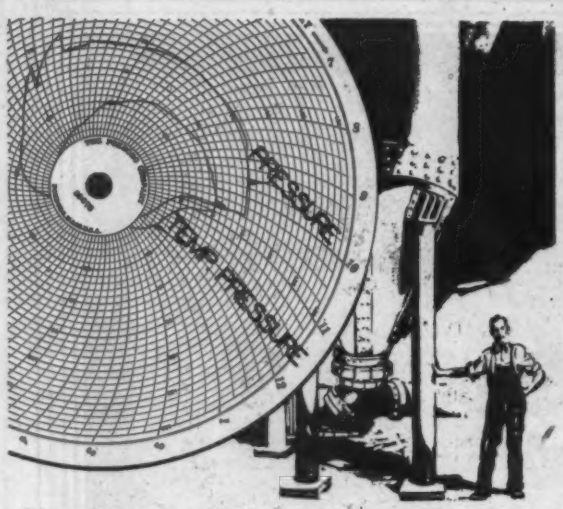

This combination record helps the superintendent maintain uniform cooking schedules.

Every Chart Tells a Story

This Foxboro Chart shows the Pressure-Temperature record of a digester cook.

Nobody had to worry about these curves. The Foxboro Combination Pressure-Temperature Recorder automatically transposes the temperature reading into a pressure reading on one line and records "gauge or total pressure" on the other. Thus each record can be compared and the gas accurately followed.

This Foxboro Recorder makes possible closer digester control, less waste and uniform quality for each cook. It is but one of many Foxboro Indicating, Recording and Controlling Instruments which are profitably used in pulp and paper mills. Each Instrument is guaranteed permanent in calibration and is accurate to within less than 1 per cent of total scale range.

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FOXBORO
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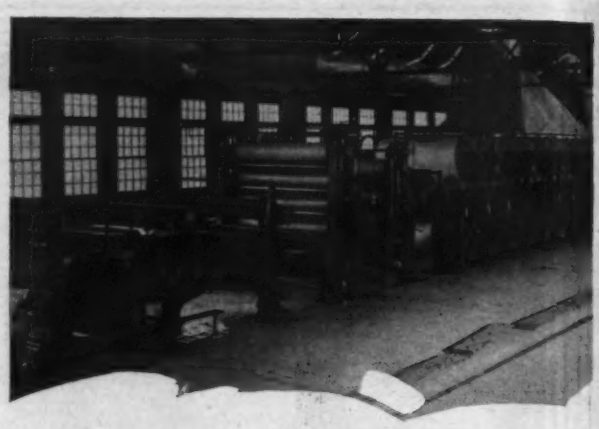
THE COMPASS OF INDUSTRY



Are you "cleaning away" the life of your wires?

ARE you cleaning wires with acid? If so, do you find that cleaning leaves them rough—that their life is shortened? Cleaning wires the "acid way" is an expensive practice, a practice that soon "cleans away" the life of the wires.

How much better to get perfectly clean wires without subjecting them to the injurious bite of acid? You can, by cleaning them the Oakite way.

Paper manufacturers everywhere find modern, safe Oakite materials ideal for all their cleaning. They speed washing and rinsing of felts; eliminate much hand brushing of wires; save effort in cleaning cylinder rolls, screen plates and sieves. These are advantages too important to overlook. Write for details, or for an Oakite Service man to call. No obligation.

Oakite is manufactured only by
OAKITE PRODUCTS, INC., 48A Thames St., NEW YORK, N. Y.
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Oakite Service Men, cleaning specialists, are located at:

Albany, N. Y.; Allentown, Pa.; Altoona, Pa.; *Atlanta; Baltimore, *Birmingham, Ala.; *Boston, Bridgeport, *Brooklyn, Buffalo, *Camden, N. J.; Charlotte, N. C.; Chattanooga, Tenn.; *Chicago, *Cincinnati, *Cleveland, *Columbus, Ohio; *Dallas, *Davenport, *Dayton, O.; Decatur, Ill.; *Denver, *Des Moines, *Detroit, Erie, Pa.; Flint, Mich.; Fresno, Cal.; *Grand Rapids, Mich.; Harrisburg, Pa.; Hartford, *Houston, Texas; *Indianapolis, *Jacksonville, Fla.; *Kansas City, *Los Angeles, Louisville, Ky.; *Memphis, Tenn.; *Milwaukee, *Minneapolis, *Moline, Ill.; *Montreal, Newark, N. J.; Newburgh, N. Y.; New Haven, *New York, *Oakland, Calif.; *Omaha, Neb.; *Philadelphia, *Pittsburgh, Portland, Me.; *Portland, Ore.; Providence, Reading, Pa.; *Rochester, N. Y.; Rockford, Ill.; *Rock Island, *San Francisco, *Seattle, *St. Louis, South Bend, Ind.; Syracuse, N. Y.; *Toledo, *Toronto, Trenton, N.J.; *Tulsa, Okla.; Utica, N.Y.; *Vancouver, B. C.; Williamsport, Pa.; Worcester, Mass.

**Stocks of Oakite materials are carried in these cities.*

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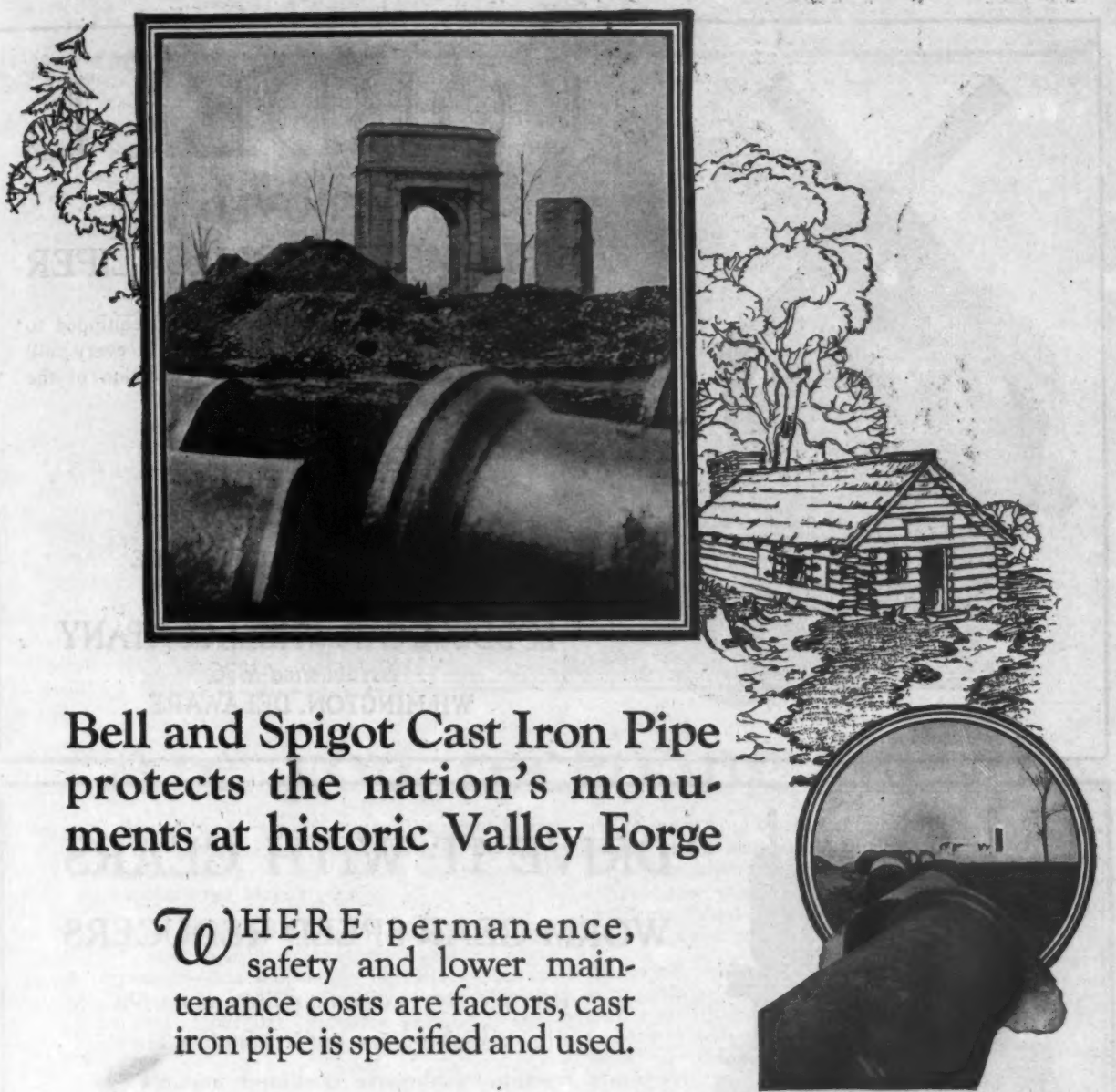
TRADE MARK REG. U.S. PAT. OFF.
Industrial Cleaning Materials and Methods



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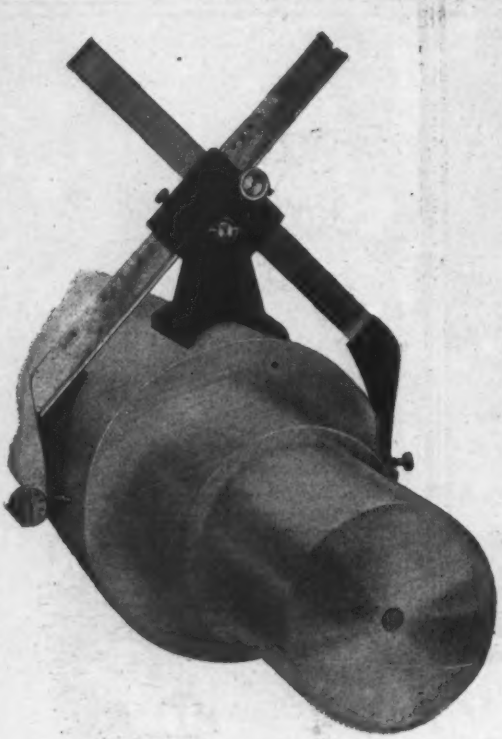

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IMPROVED MICROMETER ROLL CALIPER

An indispensable instrument to the mill equipped to do its own regrinding and equally useful in every mill in keeping an accurate check on the condition of the calender and press rolls.

LIGHT WEIGHT
EASILY ADJUSTED
EXTREMELY ACCURATE

LOBDELL CAR WHEEL COMPANY
Established 1836
WILMINGTON, DELAWARE.

DRIVE IT WITH GEARS

WORM GEAR SPEED REDUCERS

Run silently, have a long life and do not slip, stretch or get out of pitch. They operate in abrasive dust and under extremes of temperature. Whether it is at right angles, straight through, or parallel shafts there is a Horsburgh & Scott gear drive to suit your needs.

The Horsburgh & Scott Co.

"Gear makers since '89"

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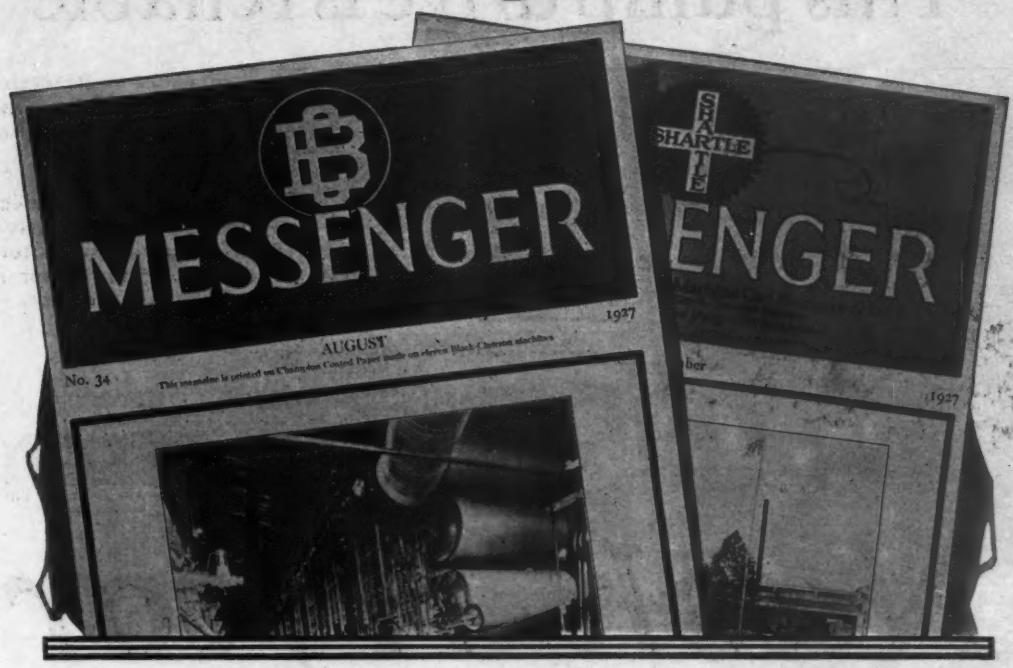
Gears for Every Industrial Purpose—Worm—Bevel—Herringbone—Spur—Spiral—Hardened Heat Treated Gears—Non-Metallic Gears and Pinions



Are you receiving these?

If not, send us your name. We want every mill executive, everyone who is in the least interested in paper making machinery to receive the Messenger.

The Messenger is a newsy, informative house organ of eight pages published every month—one month by The Black-Clawson Company and the alternative month by the Shartle Brothers Machine Company, Division of The Black-Clawson Company.

It doesn't try to sell you anything but does try to give you interesting, helpful information about new developments in paper making equipment. Some months it describes how other mills are solving their problems. And in the "Briefs Column" it tells what's doing in the industry.

All in all, we believe it's a little booklet worth while—and it takes only a few minutes a month to read it. So send us your name and address. There is no obligation whatever connected with receiving the Messenger.

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HAMILTON, OHIO

Export Offices: 15 Park Row, New York City

Builders of highest quality pulp and paper mill machinery. Patentees and sole builders of Vertical Dryers and Champion Fourdriniers.

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PAPER MAKING MACHINERY

Built with Machine-Tool Accuracy

This pump drive is reliable

Nash Hytor Vacuum Pump, direct connected to slow speed synchronous motor.

Nash Hytor Vacuum Pumps in paper mill service are often required to run night and day without interruption. To operate at full load capacity for months at a time.

Under such exacting conditions, dependable service is assured by the use of synchronous motor drive. You can connect slow speed synchronous motors direct to Nash Pumps. The rotor of the motor is mounted on the same shaft as the pump impeller.

A reliable, compact arrangement!

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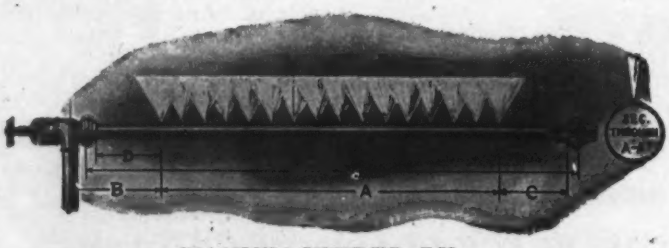
VACUUM PUMPS AND COMPRESSORS

THE "RAINSTORM" SHOWER PIPE



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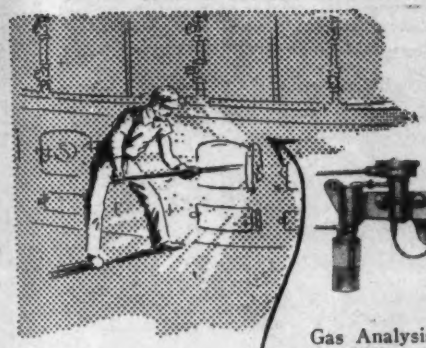
ESTABLISHED 1828

A Complete Line of Paper Bag Making Machinery

BUILDERS OF DEPENDABLE MACHINERY FOR THE PAPER MILL

The Undercut Trimmer

Die Cutting Presses



Knowledge is Power

Gas Analysis Unit

Type S Recorder

Control—

from man to management!

To know burning temperatures and products of combustion at vital spots in your mill enables you to

—control the quality of pulp produced;
—detect tendency to trouble in burners, digestors or furnaces in time to prevent waste or damage;
—aid efficiency of men and machinery;
—plot efficient curves for future work from past data;
—save sulphur in burning process;
—save fuel.

Electrical Recording Pyrometers

Engelhard pyrometers have been standard for 30 years. The new Engelhard Type S Recorder when used in connection with these pyrometers affords a rugged, simple, reliable and *permanently accurate* equipment for registering and graphically recording important temperatures. The charts are easy to read and file, need be changed but once a month, and can carry as many as 6 records at one time.

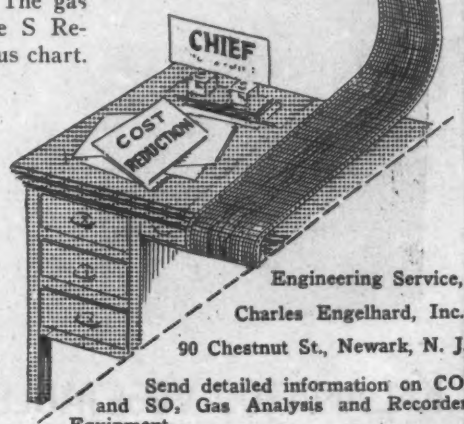
Electrical Gas Analyzer

The accuracy, speed and simplicity of this unit are revolutionizing industrial methods. Amounts of SO_2 from burners, or CO_2 in flue gases, are determined by thermal conductivity. The quartz sheaths protecting the platinum spirals in the analyzer guarantee *absolute accuracy for years.* The gas analyzer connects with Type S Recorder to furnish a continuous chart.

Engelhard Service

Let an Engelhard Engineer show you savings possible in your plant. Before installing recording equipment, mill owners have found the advice of our Service Department extremely valuable. This service is made on request, without charge.

Write for illustrated catalog.



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Send detailed information on CO_2 and SO_2 Gas Analysis and Recorder Equipment.

Mr. .....

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See these instruments work in the Engelhard Exhibit at the Power Show, N. Y. C. Dec. 5-10

Compact Crane

Specially suited to the job at a quantity production price

That concisely defines the Compact Crane made by Shepard.

You do not alter your plant, do not change existing conditions to suit the crane, but rather you select a Compact Crane with a trolley arrangement adapted particularly to the job you have in mind.

It is a simplified crane of steel, detailed for strength, braced and stiffened by a unique construction to resist stresses and strains.

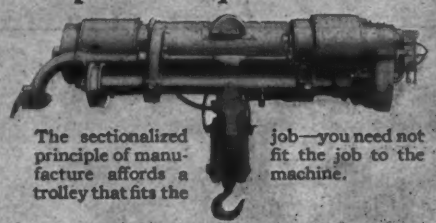
Standardized manufacture combined with a sectionalized trolley feature make available a crane of quality at a quantity production price—and that we believe the prudent crane buyer seeks.

Let a Shepard representative explain fully the advantages of this unique crane—and its economy.

SHEPARD ELECTRIC CRANE & HOIST CO.
376 Schuyler Ave., Montour Falls, N. Y.
Branches in Principal Cities
Largest Manufacturer of Electric Hoists in America

SHEPARD
ELECTRIC CRANES & HOISTS

A trolley for your specific requirements



The sectionalized principle of manufacture affords a trolley that fits the job—you need not fit the job to the machine.

Uncle Jake says—

"Let's do all the business we can honestly, have all the fun we can reasonably, do all the good we can willingly and save our digestion by thinking pleasantly."

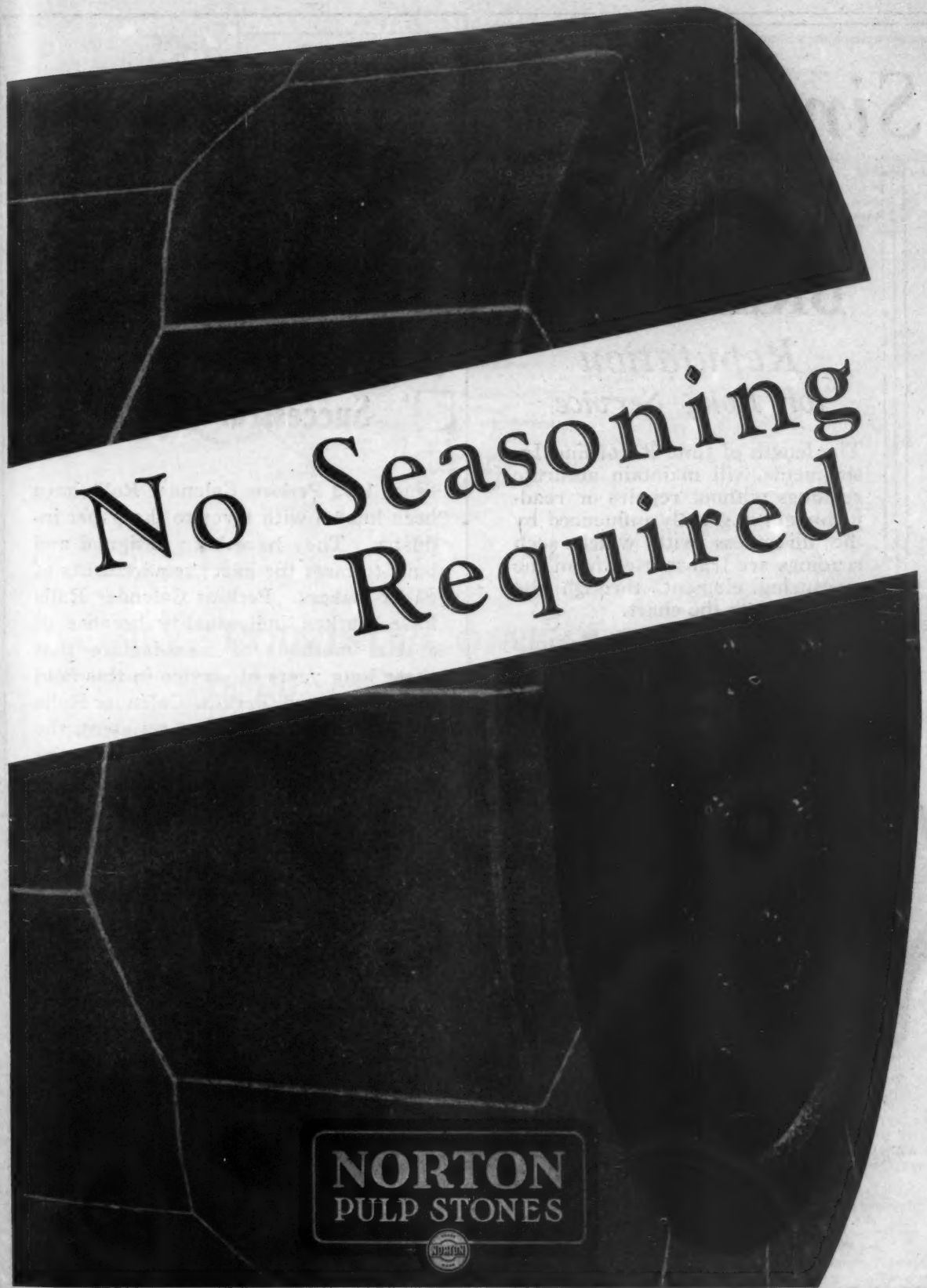
We honestly believe that our

KVP GENUINE VEGETABLE PARCHMENT

is the best made, and this without boasting.

We get a lot of fun out of our paper business because we are doing good by making it and selling it and our digestion is always in good working order because we think well of everybody.

KALAMAZOO VEGETABLE PARCHMENT CO. KALAMAZOO, MICH.



NORTON COMPANY, WORCESTER, MASS., Norton Company of Canada, Ltd., Hamilton, Ont.

Simplicity

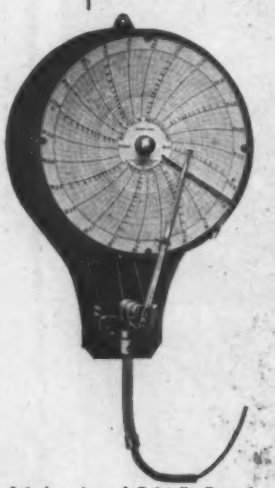
Is the Secret of

BRISTOL'S

Reputation for Long Service

The length of time Recording Instruments will maintain accurate readings without repairs or readjustments is greatly influenced by the directness with which such readings are transmitted from the measuring element, through the pen, and onto the chart.

Note the simplicity of Bristol's construction shown in the illustration. No multiplying devices whatever are used—the pen attaches directly to the measuring element. Thus cause for trouble is eliminated, for there is nothing to get out of order. No inaccuracies through friction can result.



Interior view of Bristol's Recording Thermometer.

Such equipment is a distinct asset to your plant, not only for its low maintenance cost, but in the unfaltering good service it will give you for years.

Sales Engineering Service provided. Write us about your problems.

The Bristol Company Waterbury, Connecticut

FOR 38 YEARS MAKERS OF

BRISTOL'S RECORDING INSTRUMENTS

PERKINS HOLYOKE

Calender Rolls

More than Fifty Years Successful Service

Since 1873 Perkins Calender Rolls have been known with favor to the paper industry. They have been designed and built to meet the exact requirements of paper makers. Perkins Calender Rolls have marked individuality because of special methods of manufacture that these long years of service in this field have developed. Perkins Calender Rolls are uniform, resilient and resistent, the three essentials most important to the paper manufacturer.

Perkins Calender Rolls stand heat better and wear longer. They are made in the world's largest Calender Roll plant in which have been developed special mechanical processes for preparing filler stock, which means uniform and long life to the product.

B. F. Perkins & Son, Inc., Holyoke, Mass.

TRADE MARK REG. U.S. PAT. OFF.

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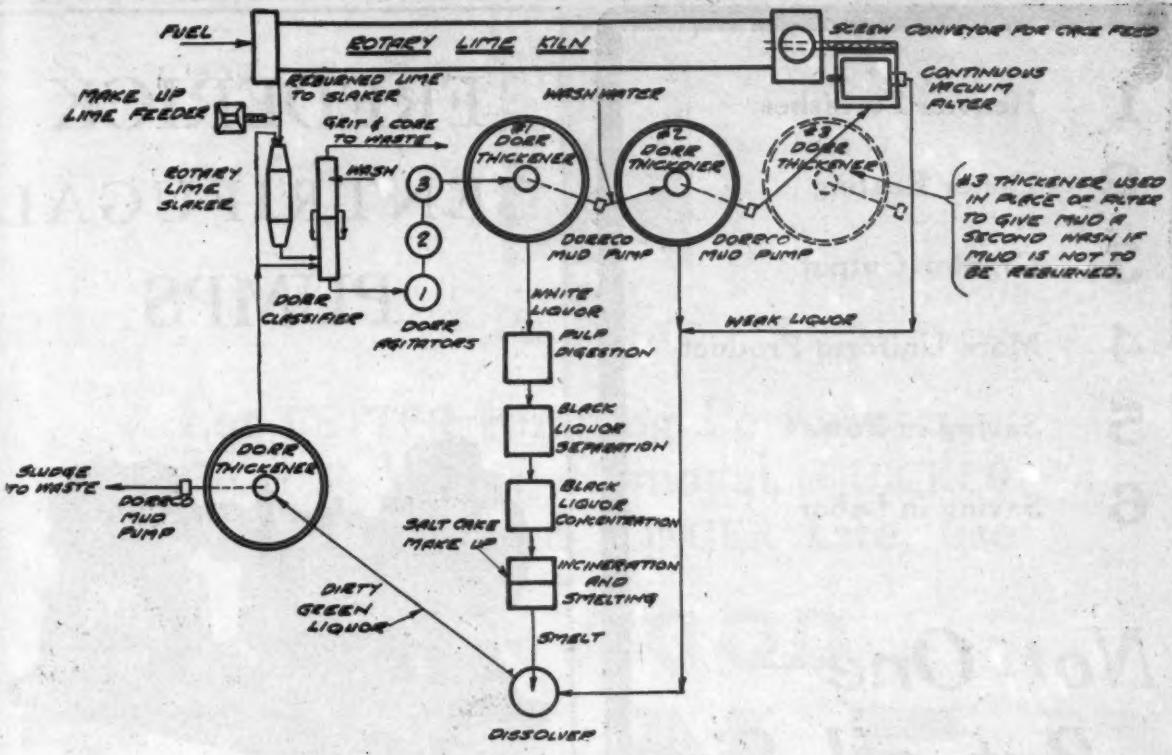

ONLY 2 POINTS OF CONTROL—

In this continuous recausticizing plant for sulphate mills.

Flexibility of operation and ease of control are features of the Dorr Continuous recausticizing system that appeal to practical paper men.

In the sulphate mill layout illustrated, two adjustments, regulated according to the amount of green liquor entering the system, control the whole operation.

1. Adjustment of wash water flowing to the last Thickener in the series.
2. Addition of make-up lime.

Results can be kept uniform, and, compared with intermittent methods, operating costs are singularly low.

With modifications to meet the particular conditions involved, the Dorr System is operating successfully in Soda Pulp Mills.

{Write for Bulletin No. 16 and special data on recausticizing in the Pulp & Paper Industry.}

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The acceptance of Dayton High Speed equipment—either new or holland engines reconstructed into Daytons—is based upon all six of the above advantages and not upon "speed" alone. Superintendents in mills that use them will tell you so. Write some of them. A list of the mills will be furnished for that purpose.

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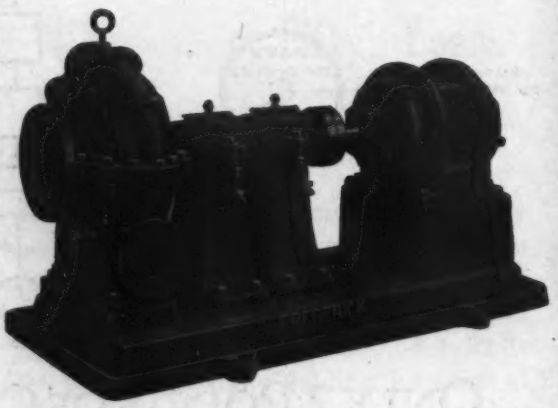

There are other good pumps, other efficient pumps, other dependable pumps. But if you want to find out definitely which is the *best* pump for you to install, compare the service records of Frederick Pumps in your line of service with those of other pumps.

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For BETTER Running Performance, HIGHER Water Removal, QUICKER Functioning and LONGER Life, use

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These Felts are treated by PATENTED chemical processes to COUNTERACT the deteriorating effects of water, alkali and acid.

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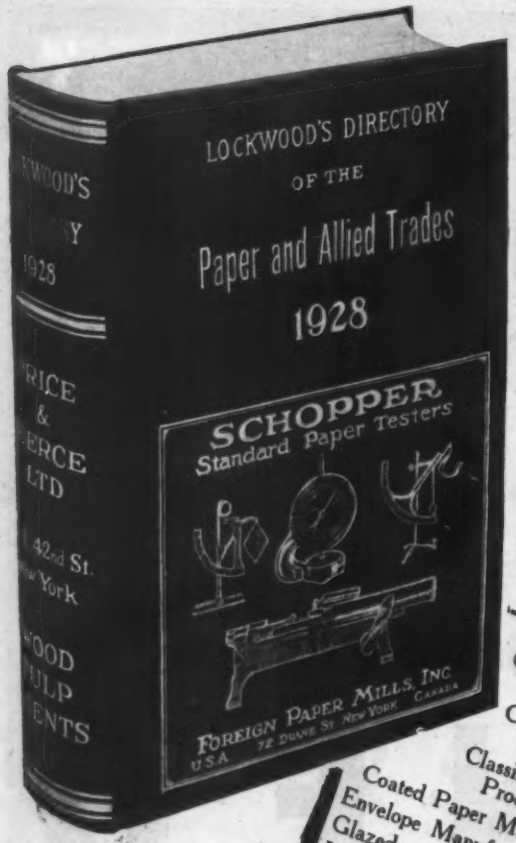

All you Want to Know about the Paper and Pulp Industry

1000 Pages Of Useful Information

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Classified List of Paper Mill Products
Classified List of Pulp Mill Products
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Envelope Manufacturers
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Pad Manufacturers
Paper Merchants
Paper Stock and Rag Dealers
Paper Bag Manufacturers
Paper Box Manufacturers
Paper, Wood Pulp and Chemical Fiber Mills of the United States, Canada, Cuba, Mexico and South America
Paper Specialties Manufacturers

Papeterie Manufacturers
Prepared Roofing Manufacturers
Rags and Paper Stock Consumed by the Paper Mills
Stationers in United States, Porto Rico, Canada, Cuba, Hawaiian Islands and the Philippine Islands
Statistical Table of Mills
Tablet Manufacturers
Tag Manufacturers
Toilet Paper Manufacturers
Trade Associations
Twine Manufacturers
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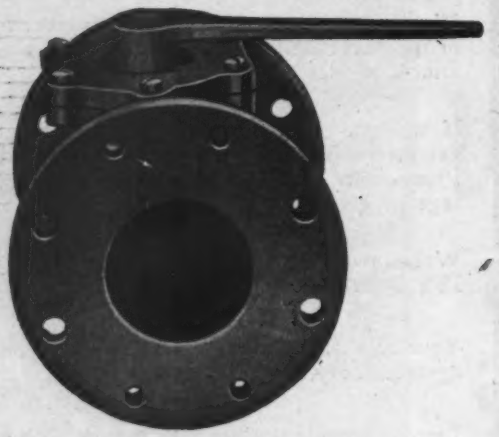
"WOLMANIZED LUMBER

DOES NOT DECAY"

"Repeat Orders Are the Best Indorsement"



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The Barker Quick Opening Stock valve **does not require cleaning** after each different color or grade of stock has passed through. The many repeat orders being received by us are the best proof of satisfaction.

Install this valve and note the difference.

GREEN BAY BARKER
Machine & Tool Works
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"Machinery Manufacturers"

"Let's go Back to ORR'S

"Our felt bills are entirely too high, and the only way to bring them down is to adopt Orr Felts."

Many a conversation like that has taken place in mills in past years--and quite naturally—

because for ability to take out water FAST, stand punishment and wear longer under heavy duty, there is no other felt in the field quite equal to an ORR.

A complete line. A particular Orr for each particular requirement.

THE ORR FELT & BLANKET CO.
PIQUA, OHIO

ORR FELTS

IT PAYS TO GET THE BEST

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Paper mill men know that a belt has to have real stamina in it to deliver the goods on the Jordan drive or the beater machine. There are terrific loads to be carried.

It is a fact, too, that in this belt-trying service, that is the very heart of the flow, there are no belts with better records for powerful, trouble-free, long-lived performance than Goodyear Belts.

These qualities especially give Goodyear Belts their exceptional capacity for this strenuous duty. They are built strong and powerful, waterproof, and subject to a minimum of stretch and slippage. And they are specified to the job by the G.T.M.—Goodyear Technical Man.

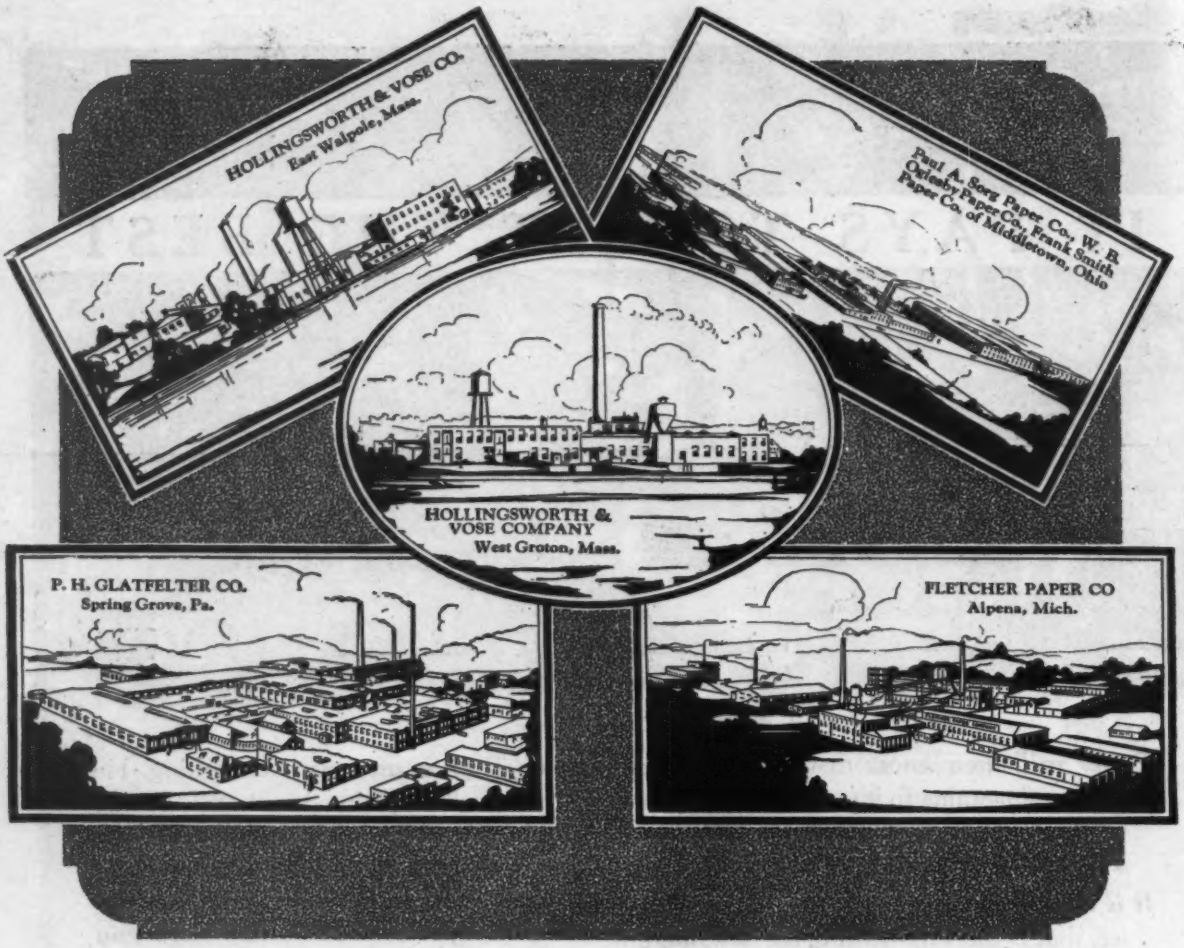
The G. T. M. is an expert on belting. He is also well acquainted with the Belting requirements of your industry. In co-operation with your plant officials, he will be glad to analyze your drives and make recommendations that may save you money, time and belting trouble. You will find that any Goodyear Mechanical Rubber Goods that he may specify for your plant — Goodyear Belts, Hose, Valves and Packing — will give you most economical, efficient service.

For detailed information about the G.T.M., Plant Analysis Method or Goodyear Mechanical Rubber Goods, write to Goodyear, Akron, Ohio, or Los Angeles, Calif.

TRANSMISSION BELTS — *Thor, Goodyear, Klingtite, Glide*
CONVEYOR BELTS
HOSE—*Water, Steam, Washup, Fire and Mill*
PACKING—*Asbestos, Rubber Sheet* • PUMP VALVES

Goodyear Means Good Wear

GOODYEAR


HOLLINGSWORTH & VOSE CO.
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HOLLINGSWORTH & VOSE COMPANY
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Spring Grove, Pa.
FLETCHER PAPER CO
Alpena, Mich.

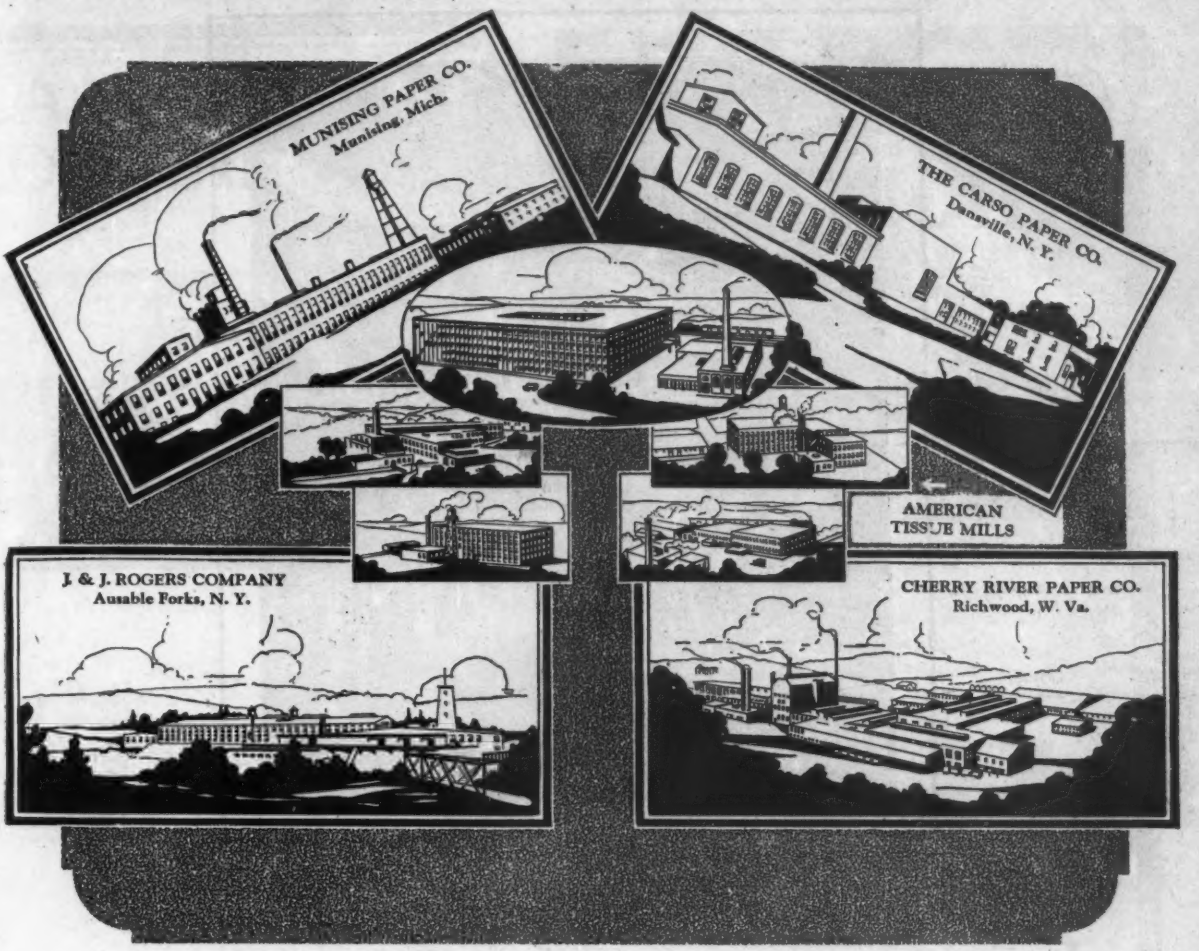
A Few of the mills using EBG

SOME of the nation's leading manufacturers of superior paper. Their choice of EBG Liquid Chlorine is significant, for these successful mills are directed by men of vision, sound judgment, seasoned experience and wide information.

The factors which exert this favorable influence would profit every paper and pulp mill. To the initiated they are factors that make the EBG contract something more than a formal document, a simple instrument of record.

The execution of a contract by EBG is no mere perfunctory matter. It implies a solemn obligation to the buyer, the faithful fulfillment of which is indicated by twenty (1907-1927) solid years of constructive effort.

A service to the paper and pulp industry inspired first



Liquid Chlorine

by a homely spirit of fair dealing and integrity; second by the manufacture of a quality product in which EBG was the pioneer; third by the rigorous adherence to principles of safety and facility, in engineering counsel, container equipment, transportation and the like.

In contracting for your 1928 Liquid Chlorine requirements—let these essential factors guide you—try EBG!

Make 1928 an EBG year!

Electro Bleaching Gas Co.

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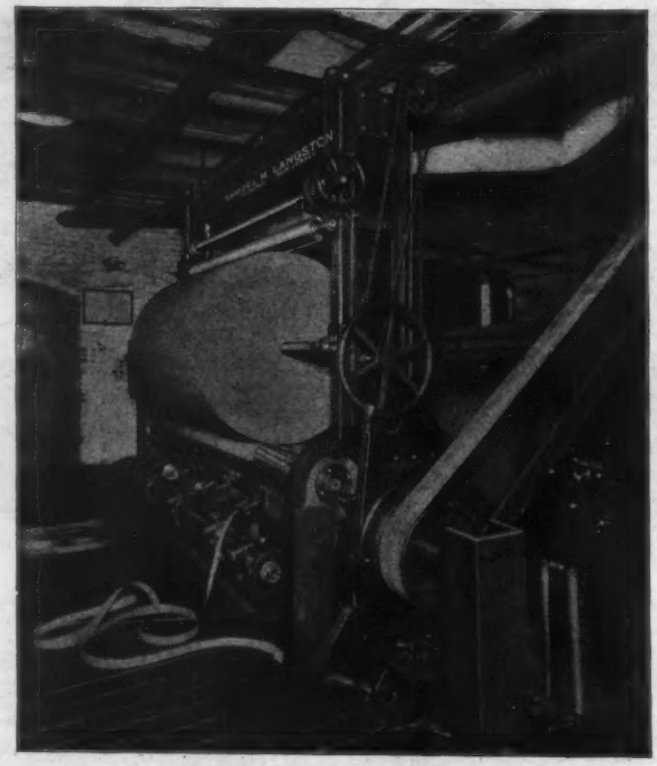


One of four 82-inch Langston Winders in plant of
H. F. Watson Company, Erie, Pa.

4 Langstons—one after another

THE first Langston Slitter was installed in the mill of H. F. Watson Company, Erie, Pa., in 1923. The next year two additional Langston Slitters were put in, and a fourth Langston was placed in service in 1926.

All four of these Langston Slitters are 82 inches in width and are used as Winders at the ends of saturating felt machines.

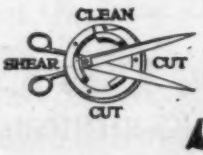
This is only one of numerous cases in which a mill has bought one, two, three, four, or more Langston Slitters, one after another, the satisfactory performance of each Langston leading the purchase of the next.

A very large proportion of all Langston Slitters built are purchased by concerns who are already using one or more of our machines, know from their own experience the kind of work you can always expect from a Langston, and buy another Langston when they need more equipment.

This is something deserving the consideration of the man who is in the market for a paper Slitter.

SAMUEL M. LANGSTON COMPANY, CAMDEN, NEW JERSEY

A. H. Cox & Co., Inc., Seattle, Washington

LANGSTON 

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Better Rolls—

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Trouble-Free Service—

A thoroughly efficient machine capable of slitting wide materials into a number of narrower widths or many narrow strips, is a valuable addition to modern factory equipment where rolls of paper or board of any kind are required in the manufacture of the articles there produced, or where material in roll form is produced for sale to others who utilize it.

May we tell you how CAMACHINES have kept pace with the needs of the paper industry, and how the right slitter and roll winder will save you money by speeding up production and cutting down waste? Just drop us a line.

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61 POPLAR STREET BROOKLYN, NEW YORK

PAPER TRADE
ESTABLISHED 1872
JOURNAL

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-SIXTH YEAR

Published Every Thursday by the

LOCKWOOD TRADE JOURNAL CO., Inc.

LESLIE R. PALMER, President — GEO. S. MACDONALD, Vice-President & Treas. — F. K. HOPPIE, Secretary

Executive and Editorial Offices: 10 East 39th Street, New York
Chicago Office: Room 14, Suite 410, 133 West Madison St.

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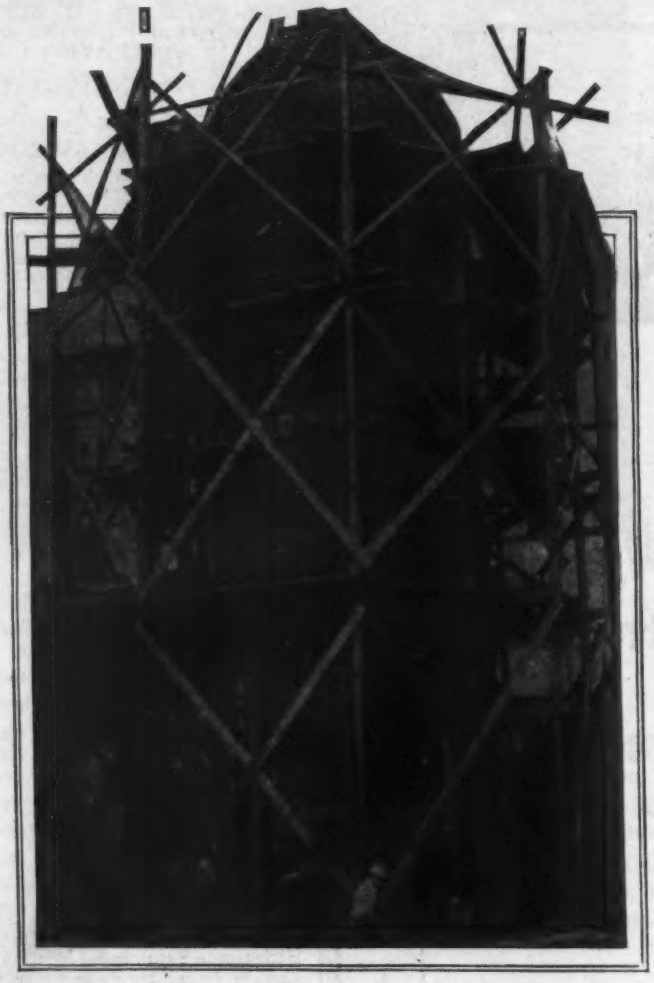
Manitowoc Digesters Give You More Profitable Production!



Manitowoc Digesters are made in our own plants and we would be glad to send you our booklet which describes and illustrates the equipment. If you will let us know what your requirements are we will be pleased to quote accordingly.

Write for this booklet today.

PAPER Mills, now more than ever are watching production costs closely. They appreciate in face of present competition that they can largely protect their profit by keeping their equipment in tip-top condition.

Manitowoc Digesters are so widely used because they give more generous production at low operating costs and outlive ordinary equipment.

We can build Digesters in various types and sizes and can alter designs to suit your requirements.

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Disc Evaporators
Blow Pipes
Cylindrical Rotaries
Globe Rotaries

MANITOWOC

ESTABLISHED IN 1872

PAPER TRADE JOURNAL

With Which Is Combined

Vol. LXXXV, No. 19 — PAPER — Thursday, November 10, 1927

Floods Devastate Western New England

Paper Mills in the Devastated Areas, However, Are Probably Not Very Seriously Damaged, Although Many of Them Have Suffered From Flooded Conditions and Will Be Closed Down For a Few Days—Traffic Facilities May Cause Considerable Trouble

Serious concern was felt in New York when the reports of the devastating floods in Western New England first reached here regarding the paper and pulp mills in or adjoining the affected areas. It was not learned at the time of going to press on Wednesday, however, that any of the plants had been seriously injured. Only meager information could be obtained at any of the offices of the various paper trade associations and at none of them were any reports made of any really serious damage to the mills. It is the consensus of opinion in New York, therefore, that judging from the information at hand, or rather lack of information, that it is reasonable to suppose that the paper mills in the sections visited by the storm suffered in many cases from a flooded condition, but that no serious damage was done and that operations in many cases will only be interfered with for a few days.

Many Holyoke Mills Closed

HOLYOKE, Mass., November 8, 1927.—The tremendous floods in New England the past week did a large amount of damage to paper mills ,causing shutdowns and delays even where there was no serious property damage. In Holyoke, for instance, the Chemical Paper Manufacturing Company, the Taylor Logan Company, the Newton Paper Company, the Franklin Paper Company, the Valley Paper Company and the Albion, Parsons, Crocker, Mt. Tom, and Riverside divisions of the American Writing Paper Company will not operate for part of the week and possibly not until next week.

When the mills resume their operation will be hampered somewhat by the fact that the freight tracks that girdle the city on the river bank have been damaged by the flood and may take several days to repair. The water on the Holyoke dam reached the unprecedented height of 14.75 feet over the crest, the highest mark previous being 12.50 feet. Grave fears are expressed as to the tail races of the mills on the river bank. The stockhouse of the Crocker mill has developed a crack though it is not thought it will be serious. Nearly every paper mill on the river bank had water in its basement and boilerroom ranging from two to six feet in depth.

Mill at Woronoco Closed

WORONOCO, Mass., November 8, 1927.—The biggest flood in the history of Woronoco took place Friday, the Westfield river rising to 15 feet in height and flooding the power house and the No. 1 mill necessitating the closing of the mill. When the flood reached its height, windows and doors in the lower part of the power house were broken in. The transformers will have to dry out before the power house can start. The dam, however, held.

L. L. Brown Paper Co. Closed

ADAMS, Mass., November 8, 1927.—The L. L. Brown Paper Company had to close its mills Friday on account of damages from the high flood. It is expected to start up in a few days.

Dike Breaks at Westfield

WESTFIELD, Mass., November 8, 1927,—The dike on the river bank opposite the Westfield River Paper Company broke Friday night, put out the fires under the steam boilers and flooded the stock in the paper mill. The mill cannot be operated until extensive repairs are made. The losses are estimated at several thousand dollars.

Erving Paper Mills Not Damaged

The Erving Paper Mills at Erving, Mass., write: "There are so many rumors of damage to New England mills we wish that in your article about the flood you would state that we suffered no damage whatever and are shipping normally again today."

Reaffirmation Made on Tissue Recommendation

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., November 9, 1927.—Simplified Practice Recommendation No. 46, Tissue Paper, has been reaffirmed for the second time and will remain in effect without change, for the coming year, according to an announcement of the Division of Simplified Practice, U. S. Department of Commerce.

A survey conducted by the industry indicated that approximately 85 per cent of the manufacturers and 93 per cent of the jobbers were adhering to the recommendation as adopted by the industry. This support compares most favorably with the figures of last year's survey which showed an average adherence of about 56 per cent.

The original Simplified Practice Recommendation, as adopted by the industry, reduced the sizes and dimensions of the roll tissue from 13 to 3, and that of shoe tissue from 21 to 6.

To Celebrate Opening of Mill at Newberg

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., November 4, 1927.—The Chamber of Commerce, Newberg, Ore., is planning to sponsor an elaborate celebration the middle of November when the Spaulding Pulp and Paper Company expect to start operation in that place. State Senator Clarence Butt, who is a director of the company, will have a part on the program.

Penn. and N. J. Superintendents Meet at Newark

Thirty Members Gather at the Newark Athletic Club and Listen To Instructive Addresses on Interesting Subjects of Timely Importance—Plant of the Eastwood Wire Mfg. Co. at Belleville and Fine New Plant of the Clifton Paper Mills Are Visited

The quarterly meeting of the Pennsylvania and New Jersey divisions of the American Pulp and Paper Mill Superintendents Association was held at the Newark Athletic Club, Newark, N. J., on Friday of last week and was attended by over thirty superintendents. The morning, after a meeting of the divisional officers, was spent visiting the plant of the Eastwood Wire Manufacturing Company at Belleville, N. J. The visit proved most enlightening as many for the first time observed the process of manufacture of Fourdrinier and cylinder wires.

W. W. Cronkhite Speaks on Paper Industry

During lunch at the Newark Athletic Club, W. W. Cronkhite of the General Electric Company, voiced some interesting facts relative to the pulp and paper industries and their standing among the industries of the world. Many points he brought out were new to most of those present. He said that the industries were not "only not sold to the general public but many of those identified with them did not fully realize their importance to the world's life."

Inspect Industrial Plants

Immediately following the luncheon the party departed for an inspection of the industrial plants situated in the Newark territory, the first stop being the Edison Lighting Institute where was witnessed an educational display of lighting effects which have been developed as a result of vast research for the purpose of intelligently informing the user of electricity relative to the best types of lamps to use for his individual requirements, whether plant or home. This visit was followed by a trip to the plant of the Manhattan Rubber Company at Patterson, N. J., where the process of producing rubber belting was witnessed, from the raw rubber to the finished product. Leaving the Manhattan Rubber Company the autos carried the party to the new board mill of the Clifton Paper Mills at Clifton, N. J. Here is installed the latest type board machine made by the Downingtown Manufacturing Company. The picture presented here of this model plant, its layout and equipment was marveled at by everyone.

Banquet at Athletic Club

During the banquet at the Athletic Club artists from Keith's Circuit entertained the guests. C. L. Ellis of the Downingtown Manufacturing Company, acting as chairman, introduced John J. White of Holyoke, Mass., a candidate for Mayor of the Queen City of the Connecticut Valley, as toastmaster. The first speaker was Prof. H. E. Weston, formerly with the Forestry Department of Syracuse University, who talked on the value of "Vocational Education" to industry. Hon. J. Henry Harrison, former State Senator and now candidate for Governor of New Jersey, enlightened his hearers on the industrial standing of Newark among the cities of the world and presented information regarding the industrial growth of what he termed "The Industrial Center" of the United States which proved to be most interesting. "Sir Charles Bartholomew, Bart.," styled a Director of British Papers, Ltd., delivered a humorous talk on his experiences in the New York Subway and other transit systems.

Among Those Who Attended

Among those present were the following: Thos. F. Martin, Hammersley Manufacturing Company, Garfield, N. J.; J. P. Collins, Bogota Paper Board Company, Bogota, N. J.; Chas. Ellis, Downingtown Manufacturing Company, Downingtown, Pa.; H. E. Weston, Chicago, Ill.; R. Eminger, Secretary of American Pulp and Paper Mill Superintendents Association, Miamisburg, Ohio; E. C. Gildenzop, Congoleum Nairn Company, Asbestos, Maryland; F. H. Fielding, Diamond Mill Paper Company, Bloomfield, N. J.; J. B. White, National Vulcanized Fibre Company, Yorklynn, Delaware; R. S. Murgatroyd, J. W. Bolton & Sons, Lawrence, Mass.; Jacob Edge, Downingtown Manufacturing Company, Downingtown, Pa.; D. Baker, P. H. Glatfelter Company, Spring Grove, Pa.; J. H. Dow, Eastwood Wire Manufacturing Company, Belleville, N. J.; G. A. Zeiss, Jr., Manhattan Rubber Manufacturing Company, Philadelphia, Pa.; J. L. Purvis, Tarentum, Pa.; Frank Ball, Manhattan Rubber Manufacturing Company, Passaic, N. J.; L. Kessler, Manhattan Rubber Manufacturing Company, Passaic, N. J.; J. D. Lawery, Kalbfleisch Corporation, New York; F. L. Barstow, U. S. Rubber Company, Fitchburg, Mass.; A. E. Waugh, U. S. Rubber Company, Philadelphia, Pa.; Geo. Kilberry, Downingtown Manufacturing Company, Downingtown, Pa.; J. A. Kilcommons, Kalbfleisch Corporation, New York; J. Owens, Jr., Fibre Conduit Company, Orangeburg, N. Y.; Geo. Foreman, Schmidt & Ault Paper Company, York, Pa.; L. D. Post, The Paper Mill, New York; S. C. Wentz, P. H. Glatfelter Company, Spring Grove, Pa.; B. Weston, Mt. Holly Paper Company, Mt. Holly Springs; E, Bechard, Eastwood Wire Manufacturing Company, Belleville, N. J.; R. F. Nelson, Glassine Paper Company, West Conshohocken, Pa.; John J. Loeb, Scott Paper Company, Chester, Pa.; R. Roy Hosner, Scott Paper Company, Chester, Pa.; Ellis Barker, Downingtown Manufacturing Company, Downingtown, Pa.; L. E. Kauffman, The Paper Products Manufacturing Company, Swarthmore, Pa.; G. E. Winslow, General Electric Company, Philadelphia, Pa.; W. W. Cronkhite, General Electric Company, Philadelphia, Pa.; H. C. Couch, Consumers Box Board Paper Company, Lititz, Pa.; C. J. Kern, Moore & White Company, Philadelphia, Pa.; H. J. Pierson, Consumers Box Board Paper Company, Lititz, Pa.; A. A. Standley, Downingtown Manufacturing Company, Downingtown, Pa.; M. Craig Maxwell, MacDowell Paper Mills Company, Philadelphia, Pa.; J. H. Loomis, Heller & Merz Company, New York; S. Clayman, National Aniline and Chemical Company, Philadelphia, Pa.; Guy H. Davies, Mount Holly Paper Company, Mt. Holly Springs, Pa.; F. P. Thornton, W. E. Greene Corporation, New York; John Cornell, The Paper Mill, New York; J. C. Dieffendefer, Paper Makers Chemical Company, Easton, Pa.; A. A. Tanyane, PAPER TRADE JOURNAL, New York; L. W. Crouse, Bennett, Ltd., Cambridge, Mass.; T. J. Keenan, *The Paper Industry*, New York; Wm. J. Robertson, Heller & Merz, New York; G. D. Wyatt, *The Paper Industry*, New York; John J. White, Holyoke, Mass.; I. Ekholm, National Aniline and Chemical Company, New York; John H. O'Connell, Springfield, Mass.; B. J. Fringelin, Diamond State Fibre Company, Bridgeport, Pa.; R. Van Cleef, Hammersley Manufacturing Company, Garfield, N. J.; J. H. Jewett, R. J. Dick Company, New York; R. A. Mitchell, R. J. Dick Company, New York; John J. Hughes, Hammersley Manufacturing Company, Garfield, N. J.; A. W. Lunn, General Electric, Newark, N. J.; C. R. Hunsicker, United Paper Board, Whippany, N. J.; John Durken, Wilson Wire Works, Kearny, N. J.; H. V. McInery, New York; G. F. Begnal, Baker Manufacturing Corporation, Saratoga Springs; C. H. Wadsworth, C. H. Wadsworth Company, New York; A. P. Atkinson, Wm. E. Hooper Sons, Philadelphia, Pa.; H. E. Maul, Ravenswood Paper Mill Company, Long Island City, N. Y.; F. C. Mousley, Continental Paper Company, Bogota, N. J.; P. M. Loddengaard, Continental Paper Company, Bogota, N. J.; J. F. Boker, Clifton Paper Mills, Clifton, N. J.

Frazer Companies Split Up Stock Three for One

Old Stock Has Been Paying Dividends of 2 Per Cent and, It Is Understood, That the New No-par-value Shares Will Probably Be Put on a $1.00 Per Share Dividend Basis—How Noah Timmins, a Prominent Mining Man, Became Interested in the Paper Industry

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., November 7, 1927.—The shareholders of the Fraser Companies, Limited, of Edmundston, N. B., have authorized conversion of the company's presently outstanding $10,000,000 par value of $100 shares of common stock into 300,000 shares of no-par-value common, i.e., a split of three for one.

A simultaneous meeting of the holders of the 7 per cent cumulative redeemable convertible preferred stock authorized conversion of each share of outstanding 7 per cent preferred stock into three shares of new no-par-value common in place of one $100 share of old common.

The old stock has been paying a dividend of 2 per cent and it is understood that the new no-par-value shares will probably be put on a $1 a share dividend basis, which will have the effect of increasing the present dividend from $2 to $3 per share.

Meanwhile a report comes from St. John that the Fraser interests have acquired the interests of the D. & J. Ritchie Company, of Newcastle, in Crown land lease and those of Robinson & Company, of Millerton, N. B.

Trees as Snow Fences

Over 10 miles of evergreen trees have been planted this fall by the Canadian Pacific Railway along their right-of-way in Quebec. These will replace the unsightly wooden fences that were erected for the purpose of keeping snow and sand from drifting on the railroad tracks.

The Canadian Pacific has approximately 110 miles of evergreen hedge along its right of way in the Dominion. The cost of planting and care of these trees is only a fraction of the cost of the fences and while it serves the useful purpose of keeping the railway cuts clear of snow, it also forms a compact and beautiful hedge, which adds materially to the beauty of the landscape.

Big Timber Deal

Thirty-five thousand acres of timber land on Vancouver Island is reported bought by Bloedel, Steward and Welch Corporation, Limited, the deal involving some $2,500,000. The timber land is in the Great Central Lake, Sproat Lake and Alberni Canal districts. There is said to be 2,000,000,000 feet of timber of which 85 per cent is fir. The property was formerly owned by the Hill Quinn Estate, Saginaw, Mich. A large mill is planned.

To Represent Hercules Power Co. in Quebec

Effective November 1, Wilson, Paterson, Gifford, Ltd., 101 Murray street, Montreal, Canada, will represent the Naval Stores Division of the Hercules Powder Company in the Province of Quebec, succeeding H. J. McAdie in that capacity. Heretofore, Wilson, Paterson, Gifford, Ltd., represented Hercules in the Province of Ontario but they will now cover both Ontario and Quebec.

A Mining Man's Paper Venture

Noah Timmins, one of the leading figures in the Porcupine and Rouyn mining fields, has had the pleasure of seeing St. Lawrence Paper Mills, Limited, of Three Rivers, Que., come into its own very quickly. It was almost against his will that Mr. Timmins acquired an interest in the company to the extent he did. There was a slip-up in the general plans at the time the company was formed and Mr. Timmins and some of his associates found it necessary to step in and take hold of the enterprise. They put in their money with a view of carrying out the general plan of financing after the mills were constructed, but even when this was done it was thought it would be a long pull for the common stock. Yet the developments of the last few weeks have resulted in the selling across $100 a share, a price that would have been thought impossible for ten years at least, a comparatively short time ago.

At times it has been said there were as many as three prospective buyers bidding for the company, but Mr. Timmins always inclined to the view that he did not want to sell, because he had become interested in the pulp and paper industry and took a certain amount of pride in bringing St. Lawrence Paper through in the way he did. Latterly, however, some of his friends have been of the opinion that he is more willing to sell than formerly, and that there was a strong probability of something being worked out.

There are four 160 inch Fourdrinier paper machines in the mills, with a capacity of 650,000 pounds of news print per 24 hours. The ground wood plant has a capacity of 520,000 pounds, and the sulphite mill a capacity of 200,000 pounds per 24 hours.

Milo Paper Mills at Penn Yan Sold

PENN YAN, N. Y., November 3, 1927.—Charles Andrews, of Penn Yan, president of the Milo Mills, while in New York recently consummated one of the largest real estate deals which has taken place in the vicinity this season, the deal transferring the Milo Paper Mills property and business, as well as water rights, to the Empire Power Company.

The purchasing company is the holding company of the E. L. Phillips Company and the New York Central Electric Corporation, which have been very active in power development in this section for the last few years.

The property of the Milo mills is located on the Lake Keuka outlet between Penn Yan and Dresden and is situated deep in a picturesque valley within sight of the village. It has a romantic history, being erected over the site of a distillery in 1868, and turned into a paper mill in 1872.

Late last year the John T. Andrews & Company, Inc., operators of the Milo Mills, represented by Charles Andrews as president, and Clarence Andrews, secretary and treasurer, both of Penn Yan, entered into a contract with E. L. Phillips and a Mr. Olmstead which provided for the purchase of the stock and property at the end of a year upon fulfillment of certain conditions.

The Andrews brothers continued in office until last week, although they personally operated the mill up to July of this year. At that time supervision was taken over by John C. Fox, who also is in charge of production at the Fox & Sons paper mill recently purchased by the E. L. Phillips Company.

Paper Concern Seeks Site in Georgia

VALDOSTA, Ga., November 7, 1927.—A large paper manufacturing concern operating successfully in the Middle West, is looking for a south Georgia location, and Valdosta is being surveyed as a possible location for this enterprise.

The mill is a very large one, and in seeking a new location, the concern states that it is desirable to get closer to a source of raw material, which is believed to be within a fifty mile radius of Valdosta. Full specifications have been submitted, indicating just what the concern would need. The preliminary examination of these requirements indicates that virtually every major one can be easily filled in Valdosta. The concern wants no gifts or concessions, merely to ascertain approximately the amount of raw material in a fifty mile circle, the rail and highway facilities from the raw material to the mills.

Paper Demand in Philadelphia Improves

Sales During October Although Less Than For the Same Month Last Year Were Heavier Than Expected—While Prices Have Been Firmly Held Throughout the Fall There Was Some Tendency To Make Concessions During the Closing Days of the Month

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., November 7, 1927.—While October sales of paper did not compare as favorably with those of the similar period of 1926 there nevertheless was a more gratifying account of business than was believed to have been in progress throughout the month. This brighter side of the paper market for the past month was verified by the summarizing of the month's accounts in the closing days last week. While sales were not as numerous as they were in the same month of last year the total amount of returns in so far as the financial recordings are concerned were larger, indicating that whatever business was done was in the aggregate more profitable, despite the lower volume of paper moving from warehouse and shelves. This was due to firmer values that have held throughout the current year on all grades of paper and the absence of inroads on prices in the keen competition for orders which has prevailed in former years. While the prices have been firmly held throughout the fall there was a tendency to make offerings below market quotations during the last days of October.

Clearing For Inventory

That price concessions made in the late October days was due to the efforts of mills and dealers to clear out warehouses for inventory purposes. October days having been duller than normally the local distributors did not have an opportunity to dispose of large quantities of papers as anticipated and when records of stocks on hand are surveyed they appear to be too large to dispose of in any sizable purchases for the balance of the year unless the holiday demand brings about a boom in business. In order to prevent abnormally large hold overs the dealers are offering to their competitors several lines of slow sellers at attractive concessions while there is opportunity for getting rid of surplus stocks. A few of the mills also have been making drives for the disposition of some lines of wrapping papers and tissues and fine papers, although most of the reductions are in the coarse grades.

Wholesale Paper Sales Pick Up

Wholesalers continue to enjoy a livelier demand for all grades of uncoated book papers. The improvement which set in mid October continues to hold throughout these early days of November. There has been a correspondingly heavy demand for envelopes in preparation for the coming new year mail announcements in the commercial supplies. Fancy papers for envelope linings also have been moving in larger volume in preparation for the holiday greeting card consumption. Mail order supplies in fine paper have been among the popular grades that have been active in the current activity.

Fine Papers More Active

The early days of the current month have been more profitable to the fine paper dealers. Manufacturing stationers' supplies have been moving in more active markets that anticipate the coming inventory season and the termination of the year's accounts and preparation for the new year. Social stationers' demands have been mounting with the opening of the fall season while the entire line of writing papers have been sought by consumers in the printing and stationery trades in frequent but small lot orders. Envelopes, cards for announcements and the box manufacturing trade, while being purchased in from hand to mouth quantities from the distributors are enjoying a broader market with the opening days of November.

Demands for fancy papers and box makers' boards continue to hold to the improvement of the mid October. Traveling representatives of the Philadelphia houses featuring box makers' papers extensively report a brisk demand from all parts of the West and the South with a fairly well maintained business in the eastern section of the country. The holiday needs in fancy coverings have been larger than at the same season of 1926 and indicates the betterment in the allied industry. While manufacturers of box board have been operating at full speed there has been a let up in the advance orders which a few weeks ago created an oversold market for news and chip boards indicative of the slower pace of business among the manufacturers now that the holiday needs of the box manufacturers have been filled.

Paper Stock Market Quietens

Paper stock, which has been most active within recent weeks, quietened down with the slower pace in the manufacturing branch of the industry. There was demand for some of the commoner grades that have been moving in such large volume that sufficient quantities could not be secured to meet the sudden spurt in mill buying. Prices held firmly. Rags continued to move in hand to mouth quantity but there was a notable firming in the quotation of some grades of the domestic supplies due to scarcity of accumulations. This was true of the newer grades of stock used in fine paper manufacturing.

Waring Distributive Organizations In Prompt Delivery

That the Waring Distributive Organizations, 527 Fifth avenue, New York, now are in position to make prompt deliveries of all orders was an assurance given to the local paper distributors by the traveling representative of that Metropolitan co-operative paper mill house, upon his visit to the trade here last week. Representative David Scott, who travels through this territory for the Waring Organizations, assured the dealers that his firms were now in position to meet promptly their late holiday orders. Among the mills represented in the group were the Port Huron Pulp and Paper Company, Port Huron, Mich.; Carolina Fibre Company, Hartsville, S. C.; Bayless Manufacturing Company, Austin, Pa., and the Groveton Paper Company, Groveton, N. H. Among the papers upon which this prompt service can be made through special manufacturing for advance holiday stocking were brown sulphite papers, bonds, writings, and wrapping papers in general. This year in order to give customers an adequate holiday service the mills' production for stocking was larger than in former years in order to avoid delays in belated orders.

P. H. Glatfelter Co. Campaigning

A wide territory is being covered by the P. H. Glatfelter Company, with local distribution through the Paper House of Pennsylvania, and mills in Spring Grove, Pa., in the direct mail campaign now being featured on the Provenworth Book Paper line. In the territory covered both the paper houses and the consumer are included in the mail advertising of this durable and high quality book line.

Aatell & Jones, Inc., Expands

With the addition of extra heavy mechanical units to be devoted to the production of menus, Aatell & Jones, Inc., 2132 Cherry street, will be provided with adequate facilities for extension of its production in hotel and restaurant specialties of its own special designs. The firm is now one of the largest producers of unique and original paper specialties in the East and has a nation

wide patronage among the larger hotels of the country. It designs and converts a wide range of paper specialties that are in daily use in hotels and its products are of higher quality than ordinarily handled in paper circles. Among the new devices that have been installed are embossing machines for napkins and doilies. The firm has recently developed an entirely original line of paper wares consumed by the confectionery trade and by hotels, and these are being produced in extensive quantities. Plans now are under way for the further development and expansion of business and these will be announced after the new year.

Anderson-Bechmann Co. Changes

For the purpose of combining its warehousing space and sales offices in perfection of service to patrons, the Anderson-Bechmann Company has acquired the second floor of the former home and now is settled in its new quarters. Until removal to the second floor was made a few days ago the firm occupied the first floor of the building for sales offices with cutting department and warehouse on the upper floors. The company specializes in card boards and cover papers. It also maintains a special cutting department featuring card cutting in all sizes and special shapes as well as standard lines. Under the new arrangement the head of the firm, Albert H. Anderson, will be able to extend an improved and speedy service in card cutting.

Add To Box Makers Papers

With the return of Charles Matthias, of the Matthias & Freeman Company, 117 North Seventh street, from a tour of the West extending to St. Louis and other southwestern points in Texas, a review of the box makers trade in the territory traveled was most gratifying in its demands for supplies for the allied industry. In all sections visited the box makers were busy on holiday orders and particularly good orders for fancy papers were placed with the local firm. Among the new offerings which the Matthias & Freeman Company made for the holidays were the additions to its Sun Rise line those of the vivid colorings of the present modes with their gold designs, and made only for the firm.

John O'Leary Resigns from D. I. Murphy Co.

Owing to ill health following a nervous breakdown, John O'Leary, who long has been identified with the Philadelphia paper stock industry, has resigned his position as general manager of the Daniel I. Murphy Company, with offices in the Brown Building, 4th and Chestnut streets, importers of rags and dealers in domestic stocks. Mr. O'Leary will devote some time to recuperating his health and resting. His duties with the Murphy Company have been taken over for the time being by Willard Heisle, who has been traveling representative for the firm.

Safepack Mills Extensions

Ralph T. Lichenstein, who is the Philadelphia distributor for the Safepack Mills, with headquarters at 217 Walnut street, has opened a new branch to the business—that of shipping supply dealer. The Safepack Mills recently were quartered in the larger home at the Walnut street address for the purpose of supplying the local trade from stocks in a local warehouse for quick service to the dealers and consumers in waterproof wrapping papers. The larger warehousing space will also provide for the new business of shipping supply dealers and the stocking of requirements that are used in shipping service such as stencil boards, shipping papers, wrappers of special grades and shippers hardware.

Paper Trade Pays Respect To John M. Sinex

Many of the local dealers represented in the Philadelphia Paper Trade Association and mill representatives paid respect to the veteran head of the Garrett-Buchanan Company, during the obsequies held at his home in Edgewater, N. J., on Wednesday of last week. The funeral services for Col. John H. Sinex, whose passing occurred last Sunday at the Pennsylvania Hospital, in his 77th year, were held at his home, the Reverend J. H. Rendall, of the Beverly Presbyterian Church, officiating. Among the mill men attending were W. B. Merlin, of the Hollingsworth & Whitney Company, and Frederick Hastings, local representative of the American Writing Paper Company, and Charles Labor, representing the Champion Coated Paper Company.

Paper Trade Association Postpones Meeting

The special meeting of the Philadelphia Paper Trade Association which was scheduled for Wednesday noon, last week, was postponed owing to the death of President John H. Sinex, at one time chief officer of the local organization, whose funeral took place that day. It was planned that a special moving picture program be provided for that day but this, too, was held over for the next session to be called in the coming week.

Adds Atlantic Gummed Tape

Specializing on gummed tapes for a wide and varied use, Paul F. Melchior, head of the Melchior Paper Company, Drexel Building, has extended the line to include the Atlantic Gummed Tapes made by the McLaren Jones Company. The Atlantic gummed tapes are of the Cambrick type used for roofing and linoleum splicing. They are extra gummed and are of durable, strong grades necessary for hard wearing purposes. The Melchior Company will be the Philadelphia distributor for the McLaren Jones Company specialty.

Thank You Papers For Jos. Hall Co.

The special papers manufactured by the Grand Lake Paper Company, New York, are being distributed in the Philadelphia territory through the Jos. Hall Company, 337 N. Second street. The line of Thank You Papers include wrapping grades in kraft of all colors that are adapted for hard wear. In the assortment are many shades that are particularly excellent holiday numbers now being bought for the coming Christmas requirements.

Hearing in Ticonderoga Paper Suit

[FROM OUR REGULAR CORRESPONDENT]

TICONDEROGA, N. Y., October 31, 1927.—Former Judge Samuel Seabury of the Court of Appeals and William W. Cannon, an associate of John W. Davis, former Democratic candidate for president, were opposed to each other in a suit argued last week in the Court of Appeals. The action was that of Percy Cowans and others against the Ticonderoga Pulp and Paper Company. The latter appealed from a judgment of the Supreme Court of Essex County reversed by the appellate division granting the plaintiff's judgment.

The suit was brought by residents of Quebec upon a judgment for $279,770.98 rendered March 20, 1924, by the Court of Kings Bench at Quebec. The decision in favor of the plaintiffs was appealed to the privy council which affirmed the judgment.

The paper company in its answer denied that the judgment is conclusive or that any part of it is due. The original action was on four promissory notes alleged to have been given by the paper company for a corporate indebtedness. The answer alleged that the notes were given on account of purchases of stock of the Riordan Pulp and Paper Company and that it had no power to purchase the stock and that the transactions were on margin made by certain officers without authority and were for the personal benefit of the officers and that the plaintiffs knew that.

It was also contended that the making of such notes was beyond the power of the defendant corporation and were illegal. Judge Seabury argued for the plaintiff and Mr. Cannon represented the appellants.

Portland Envelope Co. Incorporates

PORTLAND, Ore., November 4, 1927.—The Portland Envelope Company, Portland, Ore., which as previously announced is preparing to open headquarters in the city, has been incorporated for $40,000, for the manufacture and sale of envelopes. Members of the company are Archie A. McFarland, William A. Duncan and Harry F. Frazer.

Thousand Sheet Count Approved in Los Angeles

Many Flaws Apparently at First Noticed in New Method But After These Were Explained the System Has Been Meeting With Increasing Favor — Thomas Paper Converting Reports Splendid Business—Schumacher Wall Board Corp. To Expand

[FROM OUR REGULAR CORRESPONDENT]

LOS ANGELES, Cal., November 7, 1927.—The "Thousand Sheet Count," adopted in Los Angeles by local paper dealers on August 15, has been found to work very satisfactorily. At first there were many apparent flaws in this method, but it has proven a more simplified method of ordering paper, and several local dealers issued special instructions on its use. Blake, Moffitt & Towne prepared a special sample order blank for the use of customers, and this obviated many mistakes and misunderstandings.

Rollin C. Syres, educational director of Zellerbach Paper Company, devoted considerable time recently among customers, explaining the proper use of the "Thousand Sheet Count," and convincing them of its advantages over the archaic ream system formerly in vogue. The new system applies only to count and weight, and it is evident now that paper dealers will find it more satisfactory than the old methods. Many of the printers, believing this system would bring higher prices, opposed the adoption at first, but now that they find it a very practical plan, they are heartily in favor of its universal use. The only "upcharge" in this system is in the case of a small lot of less than 500 sheets, or the "half-thousand." But there are no higher prices on lots above this figure, and therefore the buyers will suffer no hardships by reason of its adoption.

Thomas Paper Converting Co.

The Thomas Paper Converting Company, located at 1213 S. Main street, Los Angeles, is doing a splendid business this fall, according to George B. Thomas, president of the company, which is one of the few operating on the Pacific Coast that is equipped for converting from the raw material, envelopes, specialties, cut-outs and many other products. The work in this local plant is arranged in five departments in order to insure quality production. They are the envelope cutting department, envelope folding, specialty cutting, printing department and the tablet and fold department, and they are all accessible to a well-supplied stock room.

This company manufactures many paper novelties including drinking cups, plates, tablets, bags, shelf roll, tickets, doilies, coin wrappers, cartons, bank book covers and cut outs. One of the specialties manufactured by this paper concern is a special paint strainer which was designed by Mr. Thomas and is made of heavy stock paper and after it has been specially cut, it is rolled into a conical shape, with four perforations made close to the tip of the cone and covered over with fine gauze from the inside. This has proven a fast seller, and many of them are being manufactured daily.

The latest gumming machines, envelope sealers and other special equipment are installed in the envelope department, and the peculiar method of installation permits any type envelope being made, from the small razor blade size to the large policy size, and in any shape and from any particular kind of paper stock. Six automatic high speed machines and a two-color press turn out a very high grade of work in the complete printing department, where experts are employed to handle the printing. High class stationery for many of the motion picture celebrities have been responsible for many repeat orders, and a large portion of the paper and printed matter used by the local studios are turned out by this organization. One of the fine orders recently received is a contract for 200,000 photo mailers for the Mary Pickford studio. Another order of unusual size is one to supply all the paper material and printing for fourteen local banks, in addition to many smaller ones.

Mr. Thomas Widely Experienced

Mr. Thomas has devoted many years to the paper industry, familiarizing himself with every branch of the business. He has worked in the logging camps, the mills and the factories, and in all his experience he has been highly observing of every detail of the work. For many years Mr. Thomas was affiliated with the Insel interests in the East. It was through an interview with Nathan Lemfester of the National City Bank of New York City that he first took an interest in the paper industry. He later met C. Stevenson, secretary of the National Association of Envelope Manufacturers, and from him he learned that there were many in the business without actual mill experience. But Mr. Thomas was determined to learn the game from the ground up, and so he decided to hire out in a pulp mill.

Putting his shoulder to the wheel, Mr. Thomas spent four years in the mills, working in every department, and later was employed in a factory engaged in the installation of envelope equipment machinery. After acquiring a practical knowledge of the paper industry, Mr. Thomas joined the sales force of the Whiting Patterson Paper Company. He served in various departments of this large organization, and then decided to launch into a career on his own initiative. He secured some paper machinery and left on a transport for Los Angeles, where he set up in business for himself. The first year proved rather disheartening, as he received but meager returns on his investment. But he had faith in his enterprise, and he held on persistently even in the face of keen competition, with the result that his business has more than trebled within the past few years.

Original Plant More Than Doubled

The original 6,000 square feet of the plant has been increased to 13,000 square feet, and from present indications the business will soon outgrow the Main street location. Mr. Thomas represents eight of America's leading paper companies, including the Whiting Patterson Paper Company, with which concern he was formerly associated. For a trade mark this enterprising executive has selected an old woodcut of his grandfather, with the addition of a hand and envelope, which makes a very suitable mark for such distinctive paper products. The officers of the Thomas Paper Converting Company consist of George B. Thomas, president and general manager; E. A. Baxter, vice-president; A. J. Spratt, vice-president and production manager; Jay C. Goodrich, secretary-treasurer, and John W. Kemp, legal counsel.

Schumacher To Expand

The Schumacher Wall Board Corporation, located at 5802 S. San Pedro street, Los Angeles, recently sought authority from its stockholders to increase the company's capitalization. A special stockholders' meeting will be called, according to President R. S. Shainwald, with a view to amending the company's articles of incorporation so that an increase can be made in the number of shares from 30,000 shares of preferred stock and 60,000 shares of common stock, all of no par value, to 50,000 shares of preferred stock and 100,000 shares of common stock. Preferred stockholders will also be asked to approve of the issue and sale of 3,000 shares of preferred stock and 6,000 shares of common stock.

All this is being done for the purpose of providing sufficient funds with which to erect a new factory for the manufacture of

the company's products. Work will start immediately on the actual construction of a factory building and a warehouse on a site adjoining its present plant, and it is proposed to have the new unit all completed and in operation by March 1 of next year. With new equipment, the proposed addition will call for an expenditure of approximately $400,000. When the concern moves into the new quarters, the old factory building will then be used for additional warehouse facilities.

This local company has a daily capacity of 3,500,000 feet of finished products, while an output of 5,000,000 feet of finished products is required to meet the current demand, according to the executive. Present warehouse facilities are far from adequate. The new plant will not only provide sufficient warehouse space, but will be equipped with improved machinery which will effect more economical operation and make possible quicker delivery of finished products.

This company operates an additional plant in Seattle. Its products are distributed by means of 1,650 dealers in every western state and several foreign countries. Although the local concern has been in existence but thirteen years, it has grown steadily and the business has always proven profitable.

R. J. Gruenberg Back from Vacation

R. J. Gruenberg, president of the Boxboard Products Company, San Francisco, recently spent a successful fishing expedition at Coronado Island. He not only succeeded in hooking many of the finny tribe, but he enjoyed a much-needed vacation at the well-known southern resort.

To Hear Freight Rates Case at Watertown

CARTHAGE, N. Y., November 7, 1927.—Many prominent paper manufacturing firms of northern New York have filed protests with the Interstate Commerce Commission at Washington relative to the existing freight rates from northern New York to destinations west of Buffalo and east of the Mississippi River. The Interstate Commerce Commission announced this week that the hearing in the case of the Dexter Sulphite Pulp and Paper Company and others against the New York Central Railroad Company would be held at Watertown on November 22. Arrangements have also been made to co-relate the case with the actions being brought before the commission by the St. Regis Paper Company, Harrisville Paper Corporation, and Taggart Brothers, Inc., against the Santa Fe Railroad, Ann Arbor Railroad and New York Central Lines.

All of the cases have arisen from the freight rates on shipments of news print, wrapping paper and paper bags from northern New York to points west of Buffalo and east of the Mississippi River. The cases brought by the St. Regis Paper Company, Harrisville Paper Company and Taggart Brothers are to be heard by the commission on November 21. It is expected that the testimony at these hearings will occupy more than one day so it is probable that the case of the Dexter Company will not be heard on November 22 as scheduled. The hearings will be the first ever conducted by the Interstate Commerce Commission in Watertown and will be held in the court house.

The case of the St. Regis Paper Company and the Harrisville Paper Corporation is brought against the Santa Fe Railroad and others and relates to rates on shipments of news print. The case of Taggart Brothers Company is against the Santa Fe Railroad and others and relates to rates on shipments of paper bags. Another case to be heard at the same time is that of the St. Regis Paper Company against the Ann Arbor Railroad and others regarding rates on shipments of wrapping paper. Because the cases are concerned with rates on paper shipments to the same destinations the commission at the request of the interveners has decided to hold the hearings one after the other in this city. Examiner W. H. Smith, of the Interstate Commerce Commission, will preside at the hearings.

Paperboard Industries Association to Meet

The next meeting of the Association, which is the annual meeting, will be held at the Waldorf-Astoria Hotel, New York City, Wednesday, November 16, and Thursday, November 17, 1927

This is the annual meeting at which the president, the vice-presidents and the executive committee will be elected for the ensuing year. Plans will also be outlined at this meeting covering work to be undertaken during the coming twelve months.

On Wednesday, November 16, there will be a meeting of the Paper Board Group in the morning and of the Folding Box Group in the afternoon. The Container Group meeting will be held on Thursday morning, November 17, the General Meeting of the three Groups in Joint Session convening at 2:30 P. M., Thursday afternoon. The schedule of meetings is as follows:

Meetings in "The Roof Garden," Waldorf-Astoria Hotel.

Wednesday, November 16, 1927: 10:00 A.M.-2:30 P. M., Meeting of the Paper Board Group, (Vice-President W. J. Alford, Jr., Presiding). 2:00 P.M.-4:30 P. M., Meeting of Folding Box Group, (Vice-President H. S. Hinkle, presiding).

Thursday, November 17, 1927: 10:00 A.M.-12:30 P. M., Meeting of the Container Group, (Vice-President Irving Hill, Presiding); 1:00 P. M.-2:00 P.M., Luncheon in "The Roof Garden," (All Members); 2:00 P. M.-4:30 P. M., Meeting of the 3 Groups in Joint Session, (President J. P. Brunt, presiding).

As a special feature pursuant to the plan outlined at the last meeting, President J. P. Brunt has made the necessary arrangements for an informal dinner, Thursday evening, November 17, following the business sessions, which will be served in the "Waldorf Apartment." There will be talks by the retiring and incoming officers, as well as by some of the members. Music and other entertainment will be provided.

Notices will be sent out calling meetings of Standing Committees and Executive Committee, at the Waldorf-Astoria, as follows:

Meeting of Standing Committees—11:30 A. M., Tuesday, November 15.

Meeting of Executive Committee, 1:00 P. M., Tuesday, November 15.

Coty Bag Corp. Organized

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., November 7, 1927.—A new paper bag manufacturing concern has just been organized and incorporated with the Secretary of State to carry on business in this city under the name of the Coty Bag Corporation. The company will manufacture paper bags and specialties with machinery designed by the Coty Machine Company, which has been engaged in the production of high grade machinery for many years. The company plans to employ 25 persons at the start, which number will be increased as the business expands.

Although no definite site for the new business has yet been selected officials announced that it would be located in this city. The Coty Machine Company is now located in the same building with the Watertown Machine Company and it is possible that a section of the plant may eventually be used for manufacturing purposes by the newly organized firm. The patents of the equipment which the new firm will use are all held by the Coty Machine Company, whose products have practically revolutionized the entire bag manufacturing industry.

The stockholders and directors of the new bag corparation are Alfred C. Coty, T. Earl Coty, and J. Victor Coty, of Watertown, who are also officially identified with the Coty Machine Company. The papers were filed at Albany by Attorney B. A. Gilligan and show that the company is authorized to issue 800 shares of stock, 500 of which will have a par value of $100 and will be listed as preferred. Three hundred shares are listed as common stock with no par value.

The machines which will be used are now being built by the Coty Machine Company and as soon as they are completed a site for the new business will be selected and operations started.

Ontario Mills Usually Running to Capacity

Orders While Generally Not Large Are More Numerous Than They Have Been in Some Time Past—John F. Ellis, Head of Baker-Ellis Ltd., and Honorary President of the Canadian Paper Trade Association, Celebrates 82nd Birthday Still Active In Business

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., November 7, 1927.—Business in the paper line has started off very well in November and big printing establishments are getting busier. From now until the end of the year, it is expected there will not be much to complain of in the matter of orders for stock which, while not large, are more numerous than they have been for some time. Nearly all the mills are running to capacity and those making specialties are rushed to fill orders. Paper box plants have about all they can do and some of them are operating night shifts.

Recently there was an advance of five per cent in paper bags but, otherwise, there have been no price changes, and paper quotations have been holding up well. Rag and paper stock dealers report considerable buying going on and collections have been quite satisfactory. It is understood that some price alterations in an upward direction are in the air. Manufacturing stationers are busy and the converting trade has little complaint to make regarding existing conditions. Coated paper plants are quite busy and prices hold firm. The pulp market is rather weak. The advent of colder weather has put more pep in all lines of business and naturally the paper trade generally is feeling the impulse.

Applications for Tariff Changes

At the forthcoming sittings of the Canadian Tariff Board in Ottawa several hearings relating to paper and allied lines will come up. The sittings will be held from November 15 to 21. The Pilsener Beer Company, of Montreal, is applying for a reduction of duties on waxed papers. The Hinde & Dauch Paper Company of Canada, Toronto, is making application for revision of draw back items re-containers imported by producers of salt. Geo. F. Chipman, managing director of the "Grain Growers Guide," Winnipeg, is making application for exemption of the sales tax and provision of a ninety-nine per cent drawback of duty on all paper, engravings, ink and machinery entering into the production and publishing of magazines in Canada.

Mr. Ellis Passes Another Milestone

John F. Ellis, head of the firm of Barber-Ellis, Limited, Toronto, manufacturing stationers and paper dealers, this week celebrated his eighty-second birthday. He is enjoying good health and is at his office every day, remarkably active for a man of his advanced years. Mr. Ellis is the dean of the wholesale paper trade in Canada and is honorary president of the Canadian Paper Trade Association. It was in 1876 that the present business, of which he is the head, was established and it is one of the largest of its kind in the British Empire, with branches in the western provinces and on the Coast. Mr. Ellis is a former President of the Canadian Manufacturers Association, of which body he was treasurer for a number of years. He is also a past president of the Toronto Board of Trade and is one of the most progressive and public spirited business men in the Dominion. He received many congratulations from the paper trade on his eighty-second birthday.

Good Operating Bush Conditions

Operations in lumbering and pulpwood camps are being carried on more economically than last year in that a larger production is being turned out due to the favorable days. Logging camps came in early and labor is plentiful with wages about the same as last winter, running from thirty-five dollars up and board. Provisions are costing operators about the same as a year ago but help is more efficient. With favorable weather conditions continuing and an average depth of snow for hauling next month, the production of sawlogs will be twenty-five per cent greater than during the past season. Several operators have more camps. The cut of pulp wood will be about the average.

Railway Hauls Much Pulpwood

The Temiskaming and Northern Ontario Railway, which was built by the Ontario government over twenty years ago, has been able this year to meet its full interest charges and there will be an operating surplus of about one million, three hundred thousand dollars. A great quantity of pulpwood and paper is hauled annually over the line from contractors and the pulp and paper towns in the north have helped materially to swell the revenue. The northern extension of the line from the present terminus, Pine Stump, to a point thirty miles nearer James Bay, is proceeding satisfactorily. Speaking of the showing of the road, Premier G. Howard Ferguson recently said: "The road has had deficits in the past but we never looked upon them as deficits but rather as contributions to the advancement of a part of Ontario, which is just now coming into its own."

Standardizing Sizes of Envelopes

The envelope factories in Toronto, Brantford, and other cities are enjoying good business at the present time. Henceforth only standard size productions will be turned out by such plants and by manufacturing stationers, for the post office department at Ottawa has declared war on the small envelope. When the cancellation stamps were imprinted by hand, there was no great need for uniformity of envelope sizes, but now it is pointed out, missive containers of uniform size are necessary to the efficiency of the postal system of Canada. The postal authorities negotiated with the manufacturers and the latter have agreed not to run out any more small envelopes. The most important and far reaching agreement of the stipulation is that no more miniature Christmas cards necessitating the use of tiny envelopes will be made.

Notes and Jottings of the Trade

At the Made-in-Canada exhibition, which was recently held in Peterboro, the Interlake Tissue Mills, Toronto, was awarded a silver cup for the most imposing display.

The sales office of the Georgetown Coated Paper Mills, in Toronto, has been moved from the Metropolitan building to the Kent building at the corner of Yonge and Richmond streets. Paul Fleck, son of L. E. Fleck, president of the company, is in charge of the Toronto office.

George E. Keith, of Terrace, B. C., who has been spending some months in Toronto and was the principal promoter of the new Society for Preservation of the Canadian Forests, has returned home. The object of the new organization is to aid the government in enforcing existing laws regarding the outbreak of forest fires and to cooperate with other organizations having similar aims in view.

While earnings of Provincial Paper, Limited, Toronto, successor of Provincial Paper Mills, did not show any substantial increase over last year for the first six months of 1927, it is understood that a considerable advance has been recorded during the last half of the current year to date. The company has the advantage this season of the new paper machine at Port Arthur. Six per cent bonds of the old company amounting to $1,350,000 were retired at 105 on the first of the present month.

John Taylor, of the E. B. Eddy Company, Hull, Que., was a business visitor to Toronto during the past few days.

Chicago Paper Demand Not Up to Normal

Improvement In Fall Business Expected at This Time Has Not as Yet Fully Materialized—Southwestern Paper Merchants Association To Meet at Beaumont, Texas, Nov. 11—Representative Paper Merchants Show Many Attractive New Lines

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, November 7, 1927.—As far as actual business is concerned that fall pick-up expected in the paper business has failed to materialize to the fullest extent. Last week the weather might have been accused of putting a bit of a halt on demand for the mild, Indian summer days were not inducive to stimulate fall buying. At this time real winter weather has set in but paper men in Chicago still have failed to realize the most they expected from fall trade.

Over Production the Cause

Over production is again given as the reason for slow business conditions in paper circles. This trouble has often been discussed before but, this time, one of Chicago's most well known paper men gives his idea of the solution of the problem as follows: It is his belief that over production, found now in all lines of business, will be thoroughly checked when financial institutions refuse to loan funds to any concern trying to organize in any of the fields where over production is to be found.

The market remains stable and the only change noted is that of the continued upward trend of sulphite bond, especially in the cheaper grades used for second sheets, etc. Book and cover papers remain the same.

Southwestern Merchants To Meet

A meeting of the Southwestern Paper Merchants Association to be held at Beaumont, Texas, is scheduled for next Friday, November 11. The meeting is of more than usual interest to Chicago paper men because the main topics to be discussed are an outgrowth of discussions held at the Fall Meeting in Chicago.

At Beaumont, the educational program featured at the Chicago meeting will be overhauled and discussed at length by paper merchants of the South and Southwest. The plan of the marketing committee and the survey committee, featuring the cooperative advertising plan and a study of net profit control will come under consideration. It is probable that comments on the subject of carton packing will also be heard. In fact it is expected by Chicago paper men that the program discussed at the Fall Meeting will receive valuable criticism at the meeting of the Southwestern Paper Merchants Association.

Joins Messinger Paper Co.

The Messinger Paper Company, Chicago, has added R. J. Magill, well known in paper fields, to its staff. Mr. Magill has had a great deal of experience in the paper business and has had a number of connections in the past that will make him particularly valuable to the Chicago house. One of his first connections was with the J. W. Butler Paper Company. Prior to that he held the position of sales manager with the Chicago Paper Company. He has a host of friends and acquaintances in the paper business.

New Lines of Paper Being Introduced

A number of exceptionally attractive lines of paper are being either introduced or given extra attention by Chicago paper merchants. Aside from the special holiday stocks featured by local houses various special grades and designs are being placed before buyers. The thirty different grades of standard printing papers made by the S. D. Warren Company and distributed in Chicago through the Chicago Paper Company, The Paper Mills Company and the Swigart Paper Company are attracting a lot of attention. Many of the different grades are not brand new but all are arranged for display in attractive booklets sent to paper users in all parts of the country.

The Moser Paper Company, Chicago, has an attractive enameled book known as "Foreverfold." From the Moser Paper Company comes also the interesting announcement that their organization is the first in the country to humidify its stockrooms in order to keep paper in perfect condition with folding and tearing strength at its very highest. It is said by the Moser company that troubles caused by humidity, such as out-of-register work caused by stretching and shrinking of paper, will be completely done away with by keeping the paper in proper storage condition.

The J. W. Butler Paper Company and the James White Paper Company have an attractive cover paper manufactured by the Hampden Glazed Paper and Card Company. The cover is known as "Lodestone," has the same surface on both sides and comes in three thicknesses, light weight, medium weight and heavy weight. "Lodestone" is white lined in the medium and heavy weights. Eleven distinct colors can be had in this attractive cover paper.

Samples of three lines of paper have recently found their way from the offices of the West Virginia Pulp and Paper Company, Chicago, to the office of the writer. These are samples of Westvaco Bond, Westvaco Index Bristol and Westvaco Inspiration Super. Mention should also be made of the 28th issue of the beautiful Westvaco "Inspiration for Printers," a fine piece of work giving a bird's eye view of some of the better grade work recently produced in this country. The collection is said to present a fairly comprehensive and accurate cross-sectional picture of what American printers and advertisers are doing today. Two pages of French and German specimens are also included. Thirty-eight lines of the Westvaco Mill Brand Papers are also listed in the book.

General News of the Trade

The Pilcher-Hamilton Company, Chicago, is having exceptional success with "Fluffpac," a material used for merchandise packing. It is light, soft and made well suited to packing fragile articles. "Nibroc" towels made in small or "Junior" and standard sizes, the smaller 9½ x 10 and the larger 10 x 15, are also selling very well.

The Midland Paper Company, Chicago, is featuring Old Colony Envelope Co., ready-to-print mailing sets to aid printers in selling holiday announcements.

The Rotospray Manufacturing Company, makers of clay sifters for straining clay, coatings and colors has moved its headquarters from 358 West Madison street, to 322 West Washington street. The building on West Madison street is to be torn down in the near future to make way for the proposed mammoth Chicago Civic Opera building. The Rotospray Company was forced to leave at this time because of its increased business necessitating larger quarters at once. The new location on West Washington street more than doubles the quarters formerly occupied by this well known and rapidly growing organization.

With the widening of LaSalle street now under way one of the old landmarks of pioneer stationery stores was torn down in the wrecking of the Horders, Incorporated, store formerly at the corner of Randolph and La Salle streets. The store was a pioneer in the Horder system, now spread to such an extent that there are Horder stores in every section of the loop, having been occupied by Horders since the middle of the nineteenth century.

To Make Corrugated Cartons at Menasha, Wis.

Menasha Wooden Ware Corp. To Enter This Line Because of An Unmistakable Trend Toward This Class of Shipping Containers—No Bidders Appear at Receiver's Sale of Peshtigo Paper Co. Plant and Sale Is Postponed By Sheriff Until Nov. 28

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., November 7, 1927.—This month will see the start of a large fiber box manufacturing plant in the Fox River Valley. It is a case of an old concern undergoing a partial transition to more popular lines of products to save the old from dwindling.

This industry is being established by the Menasha Wooden Ware Corporation of Menasha, Wis., a concern established 78 years ago and employing over 1,000 men. It has manufactured more than half of all the wood containers used in the United States, and has found the trend going to corrugated cartons because of their lighter weight for shipping, and their ease of storage because of requiring less space. Wooden pails were a specialty of this company.

Machinery is now being installed in a new reinforced concrete factory building four stories high and 65 by 425 feet in size. Manufacture will start as soon as the equipment is in place, and full operation is expected by December 1. One shift of about 40 people will be placed at work at the start, and the plant is to operate 24 hours daily within a short time. Fifteen persons will be added to the office force and sales staff also. The daily output is expected to reach six cars within a few weeks after the plant starts.

R. L. LaRue, who came to Menasha in July from Morristown, N. J., will manage the fiber container division and is in charge of the installation of equipment. He has had 23 years' experience in the manufacture of paper boxes. Printing presses will be installed so the boxes can be labeled before delivery. A large part of the product will be sold in the Wisconsin market.

One of the principal advantages to the Menasha Wooden Ware Company in this transition is its location with respect to source of supply. Corrugated straw board will be obtained from the Menasha Paper Mills, and paper board for double liners from John Strange Paper Company. Both of these mills are in Menasha, and only a short distance from the new box plant.

Peshtigo Paper Co. Sale Postponed

Because of the fact that no bidders appeared, the receiver's sale of the Peshtigo Paper Company, Peshtigo, Wis., scheduled for this week has been postponed by the sheriff until November 28. No bid lower than $1,600,000 will be accepted. It is expected that the fate of the plant will be known on the new sale date, because that will be the last opportunity to dispose of the mill at a receiver's sale. It is the plan of the first mortgage bondholders to begin foreclosure proceedings on December 1st otherwise.

Announcement was made recently that the mill is now virtually on a profit-making basis, with the income exceeding the costs of production. Complete reorganization has taken place under the direction of P. M. Allen, receiver-manager, and the production is now at full capacity, and on a stable basis. The common stock was rendered valueless at the time of the involuntary bankruptcy.

Plant 200,000 Trout in Nepco Lake

Continuing with its program of conservation, the Nekoosa-Edwards Paper Company, of Port Edwards, Wis., last week planted 200,000 rainbow trout fingerlings in Nepco lake. This makes half a million fry planted this year, and the season's work has now been closed. The lake was created last year when a large new dam was completed, and the company has made it a source of recreation for mill employees and the community in general.

General News of the Industry

Another educator has been absorbed by the Kimberly-Clark Company of Neenah, Wis., to assist in carrying on its program of educational training for its employees. He is A. T. Hudson, director of the Kaukauna Vocational School, Kaukauna, Wis. Mr. Hudson will engage with the paper company on December 1, and will assist along educational lines at the mill at Kimberly, Wis.

An estate of $75,000 was left by Mrs. Bessie S. Whiting of Neenah, Wis., late wife of Frank B. Whiting, of the George A. Whiting Paper Company. Mrs. Whiting died October 4 at Chicago.

Funeral services were held last week at Green Bay, Wis., for Chester C. Shepard, who died at Pittsburgh, Pa. Mr. Shepard was district sales manager for the Northern Paper Mills, Green Bay, and had charge of the Pittsburgh territory. He had resided at Green Bay for a number of years previously.

While on his way to Salem, Ore., to take a new paper mill position, P. J. Lamoreaux of Marinette, Wis., was taken ill and had to remain in a hospital at Milwaukee, Wis., for several days. He resigned recently as superintendent of the Marinette and Menominee Paper Company, Marinette, Wis.

Fred B. Chappel Dead

GLENS FALLS, N. Y., November 7, 1927.—Fred B. Chappell, manager of the Glens Falls Machine Works, whose death was briefly mentioned in the issue of the PAPER TRADE JOURNAL of November 3, died October 25 at his home in this city. Funeral services were held on October 27, after which the body was taken to Port Henry, N. Y., for burial. His death came very suddenly, being caused by a slight cold which, only a week before the end, turned into pneumonia.

Mr. Chappell was born in Mineville, N. Y., on October 19, 1880. After a period as schoolmaster he settled in this district, working for several years with the old Friction Pulley and Machine Works at Hudson Falls. About 1907 he came with the Glens Falls Machine Works as shop superintendent.

In 1917 he was appointed manager of the works, and it was under his direction that the large number of Rotary Sulphur Burners were furnished to the acid plants built during the war, both here and abroad. He was a Mason, being a member of Senate Lodge, Number 456, F. & A. M.

Mr. Chappell was married in 1903 to Miss Anna Mae Wilson, of Ticonderoga. The surviving members of the family, besides the widow, are one daughter, Meribah, his mother, Mrs. Emma Chappell, one sister and one brother.

His death at the age of only 47 years came as a shock to a host of friends and business associates. Those attending the funeral represented relatives, neighbors, employees and business men of this city and Rutland, Vt.

Swedish Paper Mills Renew Agreement

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., November 9, 1927.—General conditions continue good despite low prices ruling for chemical pulp in Sweden according to a cablegram from Commercial Attache Klath, at Stockholm. The paper mills have renewed the wage agreement with their workers for another year, and the pulp mills are negotiating with their workers in regard to new wage rates and hours of work.

As Important as Your Press Rolls

The Vickery Felt Conditioner is now considered as necessary for efficient paper machine operation as a press roll.

The need for Conditioners on every press felt is not a matter of guesswork or opinion. The savings in production through elimination of shut-downs can be definitely calculated. The increased uniformity of the sheet, and, in many cases, increased felt life are likewise subject to accurate check.

Ask us to show you in dollars and cents what Vickery Felt Conditioners can earn for you.

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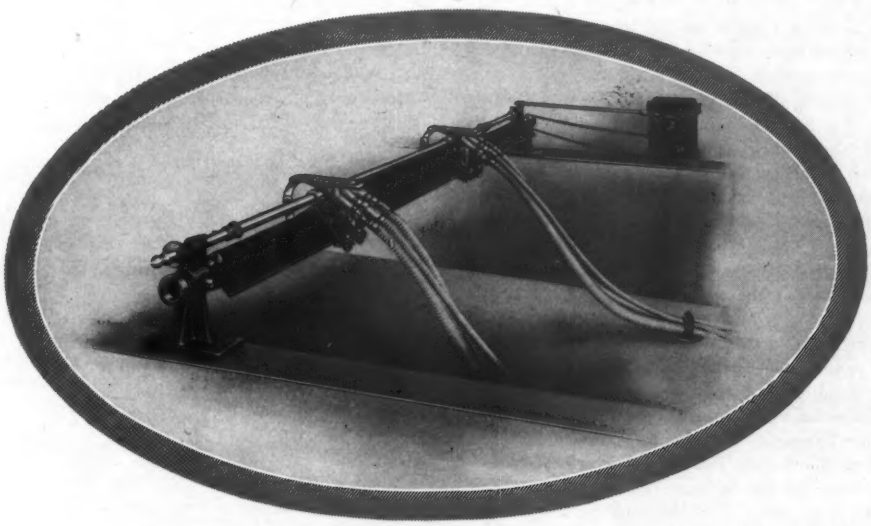

Of 450 Vickery Felt Conditioners sold, 287 represent *repeat orders*—ample evidence of the ability of the Conditioner to produce definite returns.

The Vickery Felt Conditioner

BIRD MACHINERY

1430

Paper Demand in Boston Is Fairly Steady

In Fine Papers Especially a Pretty Substantial Volume of Business is Being Done—In Kraft, However, the Demand Is Less Heavy Than It Has Been — Robert H. Tait To Address Boston Paper Trade Association Wednesday Evening, Nov. 16

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., November 7, 1927.—Reports from the paper dealers indicate that business is fairly steady, although in some quarters there is less activity. In fine papers a pretty substantial volume has moved. The continued warm weather has effected the retail trade so that there has been a less demand for kraft paper. In box-board, operations have not been very lively the last week or so, at least in some quarters, although prices have remained steady. Possibly the weather has affected the business in box board.

Paper Stock Unchanged

The market for old papers has not changed materially, although there is a certain amount of business being transacted. Bagging remains at the same level. A recent sale of 100 tons of gunny bagging took place among dealers at $1.75 per hundred pounds. It is stated that the mills are not buying large quantities of rags, an unusual condition at this season.

Boston Paper Trade to Meet Nov. 16

Robert H. Tait is to be a speaker at the fall meeting of the Boston Paper Trade Association, to be held at the Exchange Club here, Wednesday, November 16. Mr. Tait will give a "very fascinating illustrated lecture with moving pictures" on "Unknown Newfoundland." He is a big game hunter and foremost exponent in association football and hockey in Newfoundland. At Oxford he was captain of Trinity College Association football team and member of the famous Oxford-Canadian hockey team. He was Captain in the Canadian Army, and awarded the Military Cross in 1917.

Franklin P. Collier the popular cartoonist, will make interesting character sketches of some of the best known members of the association.

President Harrower has a surprise in store for those who attended the outing in June at the Charles River Country Club.

The membership committee has approved the applications for membership to the Association, of Graham Blandy, 2nd, of the Charles A. Esty Paper Company, Worcester, Mass., proposed by Charles A. Esty, and of Hartley A. Hurlbert of Hurlbert & Hatfield, Boston, Mass., proposed by the secretary.

The officers of the Association for 1927-1928 are: Norman Harrower, president; Joseph D. Snell, first vice-president; Hubert L. Carter, second vice-president; Thomas H. Casey, treasurer; and F. Bendel Tracy, secretary.

New England Paper Men To Meet

The announcement of the fall meeting of the New England Paper Merchants Association, to be held Thursday evening, November 10, at 6 p. m., at the Harvard Club of Boston, and issued by Secretary Floyd H. Blackman, states that "As a wide-awake New England Association it behooves us to be tied up with the work of the New England Council that is doing so much to put New England back where it belongs." President C. A. Esty has obtained A. H. Kenyon, who will talk on the work of the New England Council, speaking, as has been previously announced, on the subject, "There's a New Frame of Mind in New England." Reports of the Chicago meeting will be made and other important business attended to.

Crane's Olde Book

The first announcement of Crane's Olde Book, manufactured by Z & W. M. Crane, of Dalton, Mass., has been sent out by Chas. A. Esty Paper Company, New England agent for this paper for fine printing. This is an all rag paper in natural color, intended to combine in one paper the printing qualities that a machine-made paper affords, with the atmosphere associated hitherto with a hand-made paper. Crane's Olde Book is stocked in only one color, finish, weight and size. The size is 25 by 38 inches, and the weight 160 pounds to the thousand sheets, with each sheet deckled on the long sides. The company which manufactures this paper has for many years produced Crane's Linen Lawn. Crane & Co. are the makers of Crane's Bond. The two companies are under the same management. It is not a new departure for the Crane mills to make print paper, for when they began in 1801 they manufactured print as well as other papers. As time went on the two companies specialized in flat writing papers.

General News of the Trade

William M. Jordan, for 30 years with the Jordan paper interests, has become connected with the Pratt Paper Company.

John Carter & Co., Inc., have become exclusive distributors of the Eagle-A announcement line, manufactured by the American Writing Paper Company.

Hubert L. Carter, treasurer of Carter Rice & Co., is on a business trip to the Far West including San Francisco and Seattle.

A Correction

E. W. Jones, general superintendent of the John A. Manning Paper Company, Inc., Troy, N. Y., writes that the article in the PAPER TRADE JOURNAL of October 27 under the heading "Manning Paper Company Builds Power House" was incorrect in several important details. Mr. Jones states that "The plant is not a substation nor has it anything to do with power. The whole construction job deals with the building of a new water supply and sewer system. The pump house is equipped with two 10 inch Worthington Centrifugal pumps direct connected to General Electric 175 H.P. motors. The part of the story telling about the electrical control, etc., is correct. The change in water supply was made to insure a cleaner and better source of water for our Green Island mill. We manufacture telephone and high tension cable insulating paper, sand paper and bag paper for which a steady source of clean water is needed."

Herbert E. Fales Dead

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., November 7, 1927.—Herbert E. Fales, treasurer for 23 years of the Hollingsworth & Whitney Company and very well known in the trade, died Thursday, November 3, at his residence, 145 Highland street, West Newton, Mass. Mr. Fales was born in West Medway in 1866. He had been connected with the Hollingsworth & Whitney Company for 42 years. He was treasurer and director of the Hollingsworth & Whitney, Ltd., of Canada, a trustee of the West Newton Savings Bank, and a member of the board of managers of the New England Home for Little Wanderers. Mr. Fales was a member of the Second Congregational Church of West Newton, and of the Brae-Burn Country Club, of Dalhousie lodge, A. F. & A. M., and the Algonquin Club. Three sons and a daughter are living.

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ROSS SYSTEMS
HEATING—VENTILATING—DRYING

Report on Pacific Coast Pulp and Paper Industry

By Hugh P. Baker, Sec., American Pulp and Paper Association

PART III

Promotional Efforts and the Basis for Sound Development in the Future

The tendency of the American people to judge the standing or the success of a community or a state by the rapidity of its growth of population and wealth, rather than by other factors which may mean as much or more to the daily lives and contentment of the people, has caused villages or cities as they have grown up in each new section of the country to focus community activities upon promotional effort or in other words upon the boosting of the community. As the stream of population has flowed steadily westward and as villages and cities have grown at vantage points in lines of travel, or at points of abundant natural resources, there have always been a sufficient number of "natural born promoters" in each community to keep the ferment of promotion working for more industries and more people. In many new communities this ferment of promotion has resulted at times in unhealthy and unstable growth with resultant retarding of normal healthy growth.

In many respects the Pacific Northwest is a new country. There are still undeveloped natural resources capable of giving wealth through exploitation. A ferment of promotion seems at work particularly in the smaller communities throughout the Northwest. Doubtless this must be expected in such a new section of country and particularly where there is a wide-spread feeling among business men and others that what the country most lacks is more industries and more people. The common belief seems to be that the securing of new industries will solve completely the apparent difficulties of limited payrolls and limited local markets and that more new industries and new people would mean better standing and more importance as communities and states. The most obvious and the most available natural resources of the Northwest now capable of immediate exploitation seems to very many to be the remaining stands of virgin timber and the developing second-growth forests—to be turned into lumber, pulp and secondary wood products.

The Lumberman's Part in the Development of the Northwest

As in the other great sections of the country covered with virgin forests, industrial development on the west slope of the northwestern States was begun and has been continued by the lumberman. Gradually the center of lumber production in the United States has moved from the East to the Middle West, thence to the South and now to the great Northwest. Unbridled competition, an unsatisfactory and destructive method of taxing forest lands and growing competition from other commodities have brought the lumber industry of the Northwest to the point where it is facing "prosperity without profit"; and yet the production of lumber goes on apace. It has always been true that the lumber industry, not only in this country but in Europe, when it reaches the point of large production and small returns turns its eyes to other seemingly more profitable phases of utilization; hence today many of the lumbermen of the Northwest are turning their eyes to the apparently greener fields of the pulp industry as a solution of their problem.

It would appear to be the old story of men being willing to face the unknown rather than to live longer with the troubles too well known—hence the efforts of a seemingly profitless industry to break away from overproduction and decreasing returns. This situation, coupled with the feeling of the community-at-large in the Northwest that it is moving too slowly in the improvement of its standing in population and wealth, is causing the Northwestern states to turn in desire and hope to the possibility of building a profitable business in pulp and paper on the basis of forests which must be cut plus the apparently inexhaustible supply of waste wood in the forests and at the saw mills.

Necessity for Sound Industrial Development Being Recognized

With all of the desire for growth, and with all that growth means in the Northwest, there is unusual appreciation on the part of many that the future growth of the country must be on a sound, permanent and profitable basis; that progress should be made slowly and that no industry should be welcomed unless it can contribute to the stability and the sound and wholesome advancement of the community. Hence the attitude of the pulp and paper industry as it was expressed through discussion before a number of public audiences in the Northwest during the past season is considered to be fair and reasonable. It was emphasized repeatedly that the industry has never opposed the sound and profitable development of new pulp and paper mills and is not today opposing such development. However, because of large capital involved, the many difficult factors entering into satisfactory building and operation and a highly competitive market, it was urged up and down the Coast that before the development of a proposed pulp and paper mill goes beyond the brain and tongue of the promoter some fundamental investigations should be made.

First—that there should be the most careful analysis by a financial expert of the financing of the proposed plant. As stated previously it is estimated that it costs from twenty to twenty-five thousand dollars per ton of daily capacity to build a modern pulp mill and from thirty to thirty-five thousand dollars per ton of daily capacity to build a modern paper mill, and these figures do not include power, raw materials or working capital. Second—that there should be a most thorough investigation by a competent paper mill engineer of the local factors which may influence the success or failure of the plant, such as site, water for process and power, transportation, labor and raw materials of all kinds. Third—that a merchandising expert should examine in a most comprehensive way the market for the commodity which it is proposed to produce. With conditions as they are in the pulp and paper industry today this last investigation is almost more important than the first two.

Production and Profit in Pulp Mills

With the promotive spirit waxing warm it is easy to understand the stories one can hear up and down the Coast, if one will but listen, of the large profits made by pulp and paper mills now operating on the Coast. Efforts to get details as to mill profits from those talking new pulp and paper mill development seldom if ever result in statements that can be recognized as facts. Perhaps facts are the scarcest of all raw materials to those who are more interested in talking new and big developments than in recognizing the economic factors affecting industrial development. It is easy at times to find men who are almost offended when an effort is made to point out the necessity for sound investigation of financing, construction and market. In one instance, after hearing repeated stories of large profits made by a certain mill, actual investigation at the mill showed that because of certain difficulties which had arisen in manufacturing processes there was production and apparent prosperity but comparatively low profits.

Too often those who are looking at the apparently greener fields of the pulp and paper industry are the last ones to seek accurate information from those who have it to give. Without making effort to see whether the industry itself, through mills already in

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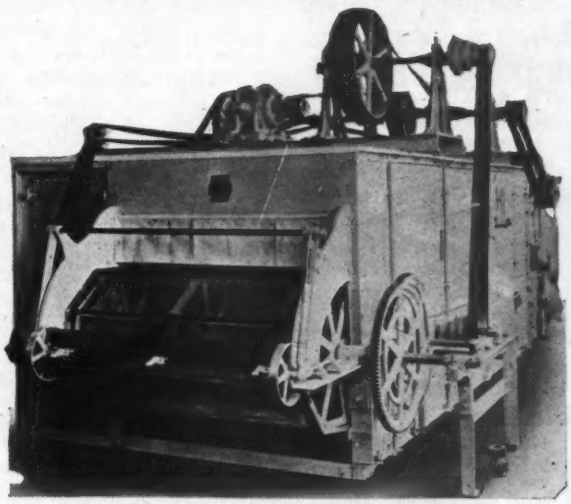

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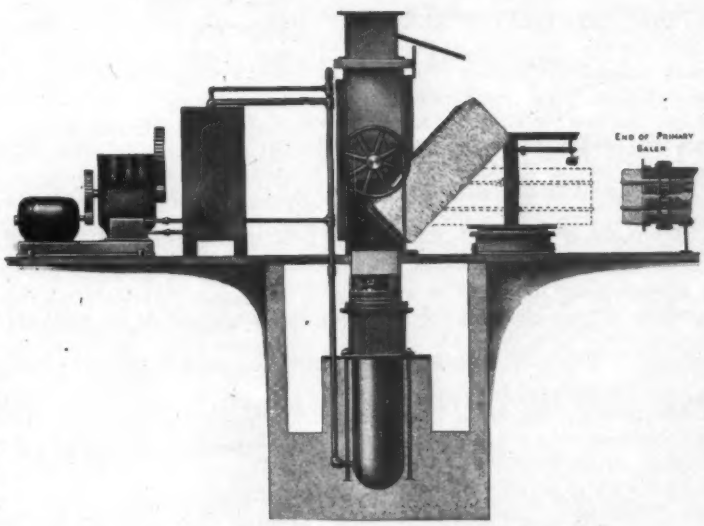

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operation on the Coast, or through the associations serving the industry, can give accurate information, these people are ready to say that of course the industry is biased and doesn't want further competition and therefore will not give accurate information. These same people have been ready at times even to condemn their local Chambers of Commerce when the industrial committee of the Chamber has urged sound investigation and that judgment as to development shall be based upon facts rather than on appearances.

It would be useless to enumerate the projected pulp and paper mills which certain promoters would have us believe will soon be under construction. It is enough to list, as has already been done, those pulp and paper mills which are already in operation or building.

Sound Development Means Future Growth

The statement was made at meetings in the Northwest and it is repeated here that if the agencies concerned with the development of industry on the West Coast, that is, the industry itself, the banks, Chambers of Commerce and the investing public, will see to it that the pulp and paper mills now in operation are given a fair opportunity to increase their pay rolls and their profits, that future development will take care of itself. To put the matter in a different way, it is perfectly reasonable to assume that money for new development will not find its way on a satisfactory basis into industries which are today unprofitable or decadent. If the Northwestern states would appreciate the fact that the method of taxing forests is purely an economic and not a political problem and so change their tax laws as affecting forests that lumbermen would not be forced to cut the forest to pay their taxes, or to get a fair return on their investment before the taxes accumulate to the point of making the investment unprofitable, it is quite within reason to believe that the lumber industry might be put back on to a profitable basis. So long as the lumber industry, the pulp and paper industry or any other industry on the West Coast is maintained on a sound and profitable basis there need be very little fear as to the future satisfactory growth of these industries.

Wood Using Industries Depend on Permanent Forests

An exceedingly important factor in the future of the pulp and paper industry on the Pacific Coast is the problem of maintaining the forests in productive condition. Even though estimates show that there is standing in the States of Washington and Oregon approximately 650 billion feet of saw timber, yet with a cut in these two states along in 1926 of over eleven billion feet and new saw mills building or forecasted, it isn't difficult to see the end of these virgin forests unless aggressive action is taken to put them on to a permanent basis. While the Northwestern states are blessed with other very valuable natural resources, such as soil, minerals, fisheries, etc., yet it would seem as if the remaining forests and forest lands capable of producing new forests would always be the chief natural resource. The Northwest, being the last great center of virgin forests in the United States, should at least be able to profit by what has happened to the virgin forests of the Northeast, the Lake States and the South. It is inconceivable that the thoughtful men and women who have done so much to build three great states on the Pacific Coast are going to stand idly by and allow the history of forest exploitation in the East to repeat itself in the Northwest.

In making the forest and forest lands continuously productive, which is the great objective of forestry, the prime essential today is thorough protection of the forests from fire. Great progress has been made in the Northwestern states in this regard but so long as serious fires occur the goal of the forest as an insurable risk has not been reached. The American people are so intent upon the getting and the spending of money that they seem to have formed the habit of temporizing with some of our great national problems like forest fire prevention, prevention of floods and erosion, etc. We are very ready to arise in our might and fight forest fires and floods after they occur but seem to be very loathe to apply effective preventive means. One has but to consider the vast sums of money which have been appropriated by the Federal Government and the states for so-called river and harbor improvement, with so much of the money going for the removal of silt and debris from our rivers and harbors, when it would have been sound economy to have spent at least a part of the money in holding the soil where it should have remained—at the headwaters of the streams. In the same way we spend vast sums of money for the fighting of forest fires, and it is very necessary and money well spent, but what we must accomplish is fire prevention. Any one who has observed the cut-over areas of the West Slope knows how quickly the new forest starts and grows where fire is kept out.

Another vital factor in maintaining the virgin forest and in keeping forest lands productive is the right way of taxing forest lands. This has already been referred to. It is difficult to understand how the system of putting an annual tax on growing forests can be used in this country. The growing crop of the farmer is not taxed. Out of fairness and as a fundamental necessity in forestry the growing crop of the forest owner should not be taxed annually. As with farm lands there should be a low soil or land tax assessed against forest land and then, because of conditions which do not affect the farmer, it is reasonable for the state to levy upon the forest crop when it is cut. Several of the states have passed rather satisfactory yield tax or forest crop laws. Washington and Oregon in particular should not delay following the example of New York, Michigan and Wisconsin in so changing the forest tax laws as to induce the forest owner to maintain his present crops and to produce new crops.

In any plan for maintaining the productivity of forest lands another factor must enter into the situation and that is artificial reforestation. In every forest region there are areas which have been so severely cut and burned that even though protected from fire they will not come back to a new forest. Only in these severely denuded areas on the West Slope will it be necessary to plant forests to bring the land back into permanent forest condition; however, planting is expensive and wherever reforestation can be secured without planting it will be the most economical solution of the problem for the present. Forestry agencies are thoroughly well organized in the Northwestern states, from the federal government down through the states to local communities and in some instances to organizations of timber owners. These agencies should be given the opportunity of extending their activities to the point of insuring the Pacific Northwest permanent forest resources.

Future Growth of the Industry in the Northwest

An analysis of the growth of the pulp and paper industry in the United tSates—and this industry has gone through much the same periods of growth as other industries—would seem to indicate that growth has taken place without conscious direction on the part of the industry itself and with little thought of what is ahead in the way of raw materials and market. In other words, the industry has grown like Topsy and the course of development has been followed without the help of chart or compass. New development has come largely through individual initiative and courage, or as the result of contest within the industry and perhaps this last course of development is the natural outgrowth of the industrial philosophy which we have developed in the building of a new nation and a new country. In this hit and miss method of development how often the failure to profit by the experience of others has resulted in wreckage and loss. Possibly industries, like individuals, must live and acquire wisdom by progressing through experiment and experience unrelated to previous experience.

As an example of what might be gained in the industry from

(*Continued on page 78*)

How Hercules Wood Rosin Is Produced

ROSIN and turpentine, generally referred to as Naval Stores, are produced from the oleoresin of the southern pine, chiefly from the longleaf species. When made from gum which exudes from the living pine tree they are referred to as gum products. When distilled or extracted from pine stump wood and pine waste wood they are referred to either as steam and solvent wood products or as destructively distilled wood products, according to the process used. Wood rosin is obtained only by the steam and solvent process.

Hercules Naval Stores products, including Wood Rosin, Steam-distilled Wood Turpentine and Steam-distilled Pine Oil, are all obtained by the steam and solvent process. This method of production consists of first cutting the resinous pine wood into fine chips; second, distilling from the chips with steam the turpentine and part of the pine oil; third, extracting from the chips the rosin and the remaining pine oil with a hot volatile solvent, usually gasoline; fourth, recovering the rosin and pine oil from the solution containing solvent; fifth, refining the turpentine and pine oil, then finishing and barrelling the rosin.

The production of wood rosin by the steam and solvent process has increased largely since 1910. At present more than half of all wood rosin produced is supplied by The Hercules Powder Company.

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Profitable Stoker Installations

The liberation of every available heat unit in the fuel consumed under the boilers is the first requisite for an efficient and economical power plant. Trite as this may sound, the importance placed on conserving fuel to the utmost and on deriving every last possible cent from its utilization has led, for one thing, to much experimentation in the utilization of pulverized fuel. At the same time, it has been largely responsible for pronounced stimulation in the progress made in mechanical stoker development.

It is not the intention to enlarge here upon the relative merits or demerits of pulverized fuel combustion and of the results secured in modern stoker practice, but simply to draw attention to the common basic consideration of liberating heat units. With pulverized fuel combustion, when the fuel has been properly prepared and treated, all of the heat unit content is liberated. In suitable modern stocker operation, almost all the heat units can be liberated. Where only a comparatively few years ago, stoker practice which entailed a 5 per cent B.t.u. loss in the ashes was considered good, today the B.t.u. waste in the ash from suitable stokers of approved design and construction is a matter of a relatively small fraction of 1 per cent. It is the margin between the cost of preparing the fuel for combustion in pulverized form and of the value of the unconsumed fuel (heat units) which may be rejected with the ashes and refuse from stoker grates which is, or certainly should be, the dominating consideration determining the relative merits of the two systems. If it costs less to pulverize the fuel and prepare it for utilization in burners than the expense incident to the waste of rejecting a little good fuel with the ashes, it will pay to install a pulverized fuel system. If the balance is the other way, stokers should be employed, but, and this is highly important, the proper variety of stoker should be used.

General Classification of Stokers

In general, three main classes, or divisions, of mechanical and semi-mechanical stokers of approved design are now on the market. These divisions are subject to considerably further variety classification, it is true, but more in respect to design and constructional details than in respect to the principles entailed. The three main classes are the underfeed, overfeed and chain grate varieties of stokers, all of which have proved highly satisfactory in paper mill power plant service under suitable conditions.

Underfeed stokers, as a class, have the ability to carry somewhat heavier fires than the other two classes and as the plunger or screw feeding mechanisms tend to break up the fire bed continually caking fuels can be burned with quite satisfactory results. Overfeed stokers are also advantageous in burning coals of the caking variety, the movement of the grate bars keeping the fire bed, which with this type of stoker is usually comparatively thin, broken up and open. Chain grate stokers are especially adaptable to the burning of low grade fuels, particularly those high in volatile matter. These general characteristics are better brought out, however, by consideration of specific stoker installations of merit in paper mill service and are itemized in this way simply to explain why some leading manufacturers of automatic stokers build units of several of the general classes.

Examples of Underfeed Stoker Installations

The St. Croix Paper Company, for example, operates two 1,057-horsepower boilers at its plant at Woodland, Me., for its power requirements and for the steam employed in its wood-pulp cookers, which are fired by 8-retort underfeed stokers. Commenting on this installation, the Chief Engineer of the plant, F. R. Pratt, made the statement some time ago, "We are proud of our boiler plant now, and glad to show it to anyone."

This enthusiastic endorsement of stoker firing was called forth by the fact that the installation of the stokers effected a saving of 62.5 per cent in labor and 30 per cent in fuel. Previous to the installation of the stokers, eight men per watch were kept arduously busy in the boiler room—afterwards, only three with decidedly lighter duties.

Location	Stoker installation	Investment entailed	Major improvements realized	Estimated annual saving	Yearly return on investment
Sutherland Paper Co., Kalamazoo, Mich.	5—Huber Overfeed Semi-Mechanical Stokers firing 150-hp. vertical water tube boilers.	$6,357.84	Monthly fuel bill reduced $750 and labor expense reduced $216 per month.	$11,592.00	182 per cent
Wardlow Thomas Paper Co. Middletown, Ohio.	Taylor Underfeed Stoker firing 300-hp. boiler.	.....	Increased boiler capacity 83.34% and saved $10,000 investment.	2,000.00	.....
Bryant Paper Co., Kalamazoo, Mich.	4—Frederick Underfeed Stokers firing 778-hp. boilers.	.....	Increased boiler efficiency 10% and reduced labor expense 75%.	28,000.00 [1] 20,000.00 [2]	....
St. Croix Paper Co., Woodland, Me.	2—Taylor Underfeed Stokers firing 1,057-hp. boilers.	.....	30% saving in fuel and labor expense reduced 62.5%.	148,444.00	.....
Bathurst Co., Ltd., Bathurst, N. B.	4—Taylor Underfeed Stokers firing B&W boilers.	.....	Saved 0.35 ton of coal per ton output, labor expense of 6 men, reduction in upkeep.	5,052.00 [3]	.....
Marathon Paper Mills Co., Rothschild, Wis.	Taylor Underfeed Stoker firing 871-hp. boiler.	14,000.00	Increased boiler efficiency of 2% attributed to stoker, saving in labor and fuel.	6,365.60 [4]	45 per cent

[1] In labor. [2] In fuel. [3] Compared with underfeed stoker of other make. [4] Compared with hand firing.

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The boilers are operated at about 150 per cent of rating during the summer months and at from 175 to 180 per cent in the winter, with a very erratic load, so results which lop off almost a third of the coal previously consumed are obviously decidedly satisfactory. The flexibility of these stokers and their ability to meet all sudden demands for steam is further emphasized by the really high boiler efficiency maintained under such trying load conditions. During a period of eight consecutive weeks, banking the boilers over Sundays, the boiler plant efficiency averaged 78.65 per cent.

At the plant of the Bryant Paper Company, Kalamazoo, Mich., results of similar high order are obtained with underfeed stokers of a different make, but also of 8-retort width. A new boiler house, accommodating four 778-horsepower boilers with underfeed stokers, was erected, which replaced four boiler houses in which were installed twenty-four boilers of various sizes, types and designs. An operating force of thirty-seven men was necessary to care for the four boiler houses, against nine men for the one newer boiler house. Also, the larger stoker fired boilers developed approximately 10 per cent higher efficiency in steam generation. The net result has been a reduction in labor expenses, representing a saving of $28,000.00 a year, and a greater boiler efficiency, effecting a further economy of $20,000.00 per year.

Capitalizing on Progress in Stoker Development

While these two instances are typical of hundreds of other cases where modern stoker service has displayed obsolete hand firing methods, very worthwhile savings are to be realized by the progressive mill which keeps its stoker installation abreast of stoker development and also by the mill with sufficient courage to replace an outgrown stoker with a more suitable one, not infrequently of a different type. When such replacement is advisable, it is not to be construed as indication that the old stoker is necessarily an unsatisfactory unit, for it may simply have been outgrown, or that the new stoker of a different make is necessarily a more efficient unit in all cases, for it may be that the operating conditions as they have developed may have so greatly altered that a different type of stoker should be employed. The replacement of one unit by another, in fact, is frequently no reflection on the worth and efficiency of the stoker displayed.

An example of the value of keeping up with stoker development is in the case of the experience of the Wardlow Thomas Paper Company, Middletown, Ohio, where underfeed stokers of one make have been employed exclusively, the oldest of which has been in service something like sixteen years and the newest perhaps four years. The plant has three 550-horsepower boilers, two of one type and the third of a different variety, and one 300-horsepower boiler.

A few years ago, increased steam demand developed the situation where the installation of an additional 250-horsepower boiler had to be considered, but before making such investment the stoker serving the 300-horsepower boiler, which it was appreciated was of an old type, was replaced by a more modern one of advanced design and somewhat larger. The result was that the capacity of this small boiler was raised to compare favorably with that of the larger boilers, by making it possible to drive the smaller boiler at 200 per cent of rating for unlimited periods, and to do so without difficulty. Increasing the capacity of the boiler 83.34 per cent in this way avoided the necessity of making a $10,000.00 investment in a new boiler and of contracting the some $2,000.00 annual carrying expense the additional unit would have entailed.

When the St. Maurice Paper Company, Ltd., decided to remodel its boiler plant at Cap Madeline, Quebec, some very interesting tests were conducted to ascertain the advisability of installing underfeed stokers in preference to another variety which had previously been employed. The conditions as they pertained at the time of this investigation clearly favored the installation of the underfeed type of stokers. At all loads, the CO_2 flue gas content with underfeed stoker firing averaged around 13 per cent, while with the other type of stoker there was a CO_2 content in the flue gases of only 8.5 per cent., with a load of 120 per cent of boiler rating. In another test, showing the relation between ash and refuse when burning a fuel averaging 8.9 per cent ash, the underfeed stokers showed a saving of approximately 2.2 per cent. In addition, the underfeed stoker gave very conclusive evidence of much greater flexibility in meeting heavy steam demands. It responded to calls at 200 per cent of boiler rating in about 10 minutes less time than did the other type of stoker.

The saving in fuel consumption indicated by these tests is in toto very close to 8.7 per cent. A further test of apparent evaporation showed 8.83 pounds with underfeed stoker firing against only 8.11 pounds with firing by the other type of stoker. This is equivalent to a gain, or saving, of 8.8 per cent, closely confirming the results obtained with the other set of tests.

At the plant of the Bathhurst Company, Ltd., Bathhurst, New Brunswick, underfeed stokers, replacing in this case another type of stocker, effected a saving of over a third of a ton of coal per ton of pulp Production. For the year's output, this represents a saving of $37,111.00. Also, at the new power plant of the MacSim Paper Company, Otsego, Mich., underfeed stokers of the single, center retort type which serve six 500-horsepower vertical water tube boilers are reputed to be substantially cutting former labor and fuel costs.

Still another instance where underfeed stokers have proved a profitable investment for a mill where conditions had developed to make a change or an addition in stoker installation advisable is at the Marathon Paper Mills Company, Rothschild, Wis. A stoker of this type was installed under a 871-horsepower boiler, four other 394-horsepower boilers being already equipped with another and older variety of underfeed stoker, with highly gratifying results.

The more modern underfeed stoker and larger boiler, which now supplies the greater proportion of the mill load, is customarily driven at close to 200 per cent of normal rating during the winter and has been operated entirely satisfactorily at 264 per cent of rating. The CO_2 content of the flue gases average between 12 and 13 per cent and an evaporation of over 9 pounds of steam per pound of coal, rice screenings having an average heat content of 12,500 B.t.u. per pound, is secured. The result of these admirable attainments has been an increased over-all efficiency of the entire plant of from 65 to 75 per cent, 2 per cent of which is very conservatively credited to the stoker. On such basis, the fuel saving amounts to 842 tons of coal per year, valued at approximately $5,052.00.

In comparison with hand firing records, the stoker installation saves at least two men per shift, $21.60 a day, and two and a quarter tons of coal every twenty-four hours, $13.50 per day. Taking into account all fixed charges, operating expenses and making due provisions for maintenance and repairs, this means a net saving per year of $6,365.60, or a return of very close to 45 per cent per annum on the investment entailed.

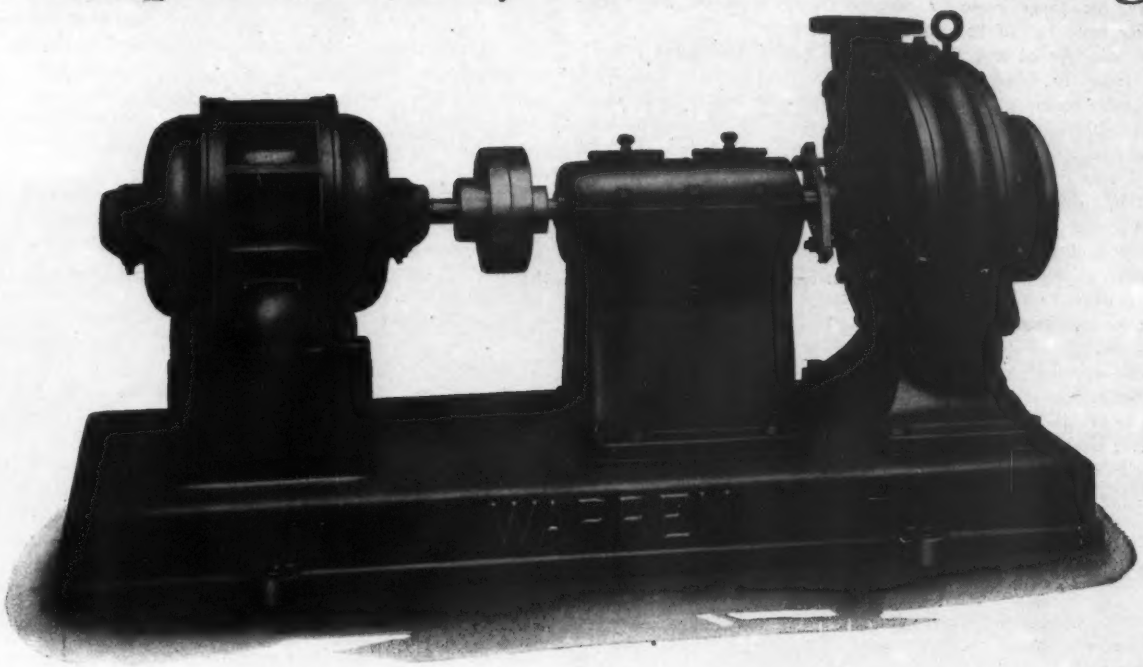
A Profitable Overfeed Stoker

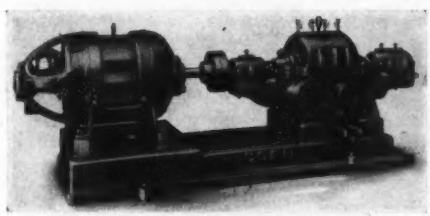
These installations are all in plants of quite considerable capacity, where the ability of the stoker to carry heavy fires is of the utmost importance, still economies of considerable weight are also possible for the smaller plant, particularly where the use of semi-mechanical overfeed stokers would be suitable. A recent installation of this character at the Sutherland Paper Company, Kalamazoo, Mich., is typical.

In this plant, five semi-mechanical stokers of the overfeed variety, the coal pushers of which are operated by simple hydromotors, serve the same number of 150-horsepower vertical water tube boilers. These stokers cost installed a matter of $6,357.84.

This entire investment was returned by the savings the stokers effected in a little over seven months. The use of the stokers brought about a reduction in the average monthly fuel bill of

Keeps Heavy Stock Moving





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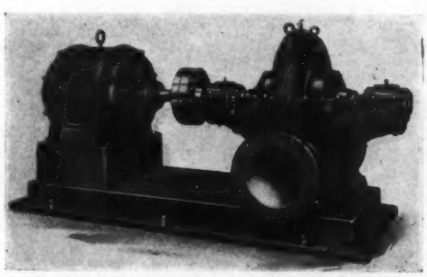

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St. Paul
San Francisco
Scranton
Toronto

1364

$750.00 and in labor of $216.00 a month. This is equivalent to a return of 182 per cent per annum on the investment. Furthermore, the paper company reports ability to obtain 200 horsepower more out of their boilers than before.

In this type of stoker, the coal is delivered to hoppers projecting from the front of the boilers, above the usual firing door, either by means of overhead conveyors or by hand, from which it is fed onto the stoker proper by mechanically operated pushers. The coal, as it leaves the hopper, passes over a broad coking shelf and under an ignition arch extending, likewise, the width of the furnace. In so doing, the coal is subjected to the radiant heat of the fire, ignited and partially coked.

The light burning volatiles, driven off during this initial coking process, pass out over the fire bed, while the partially coked fuel drops onto the stoker, where it gives off its heavier volatiles and as coke is moved down the inclined stoker grates by the alternate movement of manually operated stoker bars. These bars break up the fuel bed, advance the coked coal and distribute it evenly across and over the stoker surface. No green fuel reaches the stoker and the formation of smoke is avoided.

This somewhat detailed explanation of the principles entailed in the operation of these overfeed stokers has been presented, 1st., because they are probably not as familiar to the average paper mill as the principles governing the operation of the usually

Courtesy: Flynn and Emrich Company.

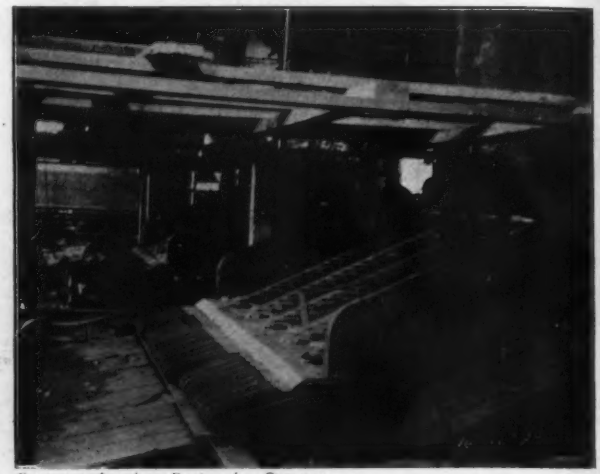
HUBER SEMI-MECHANICAL (OVERFEED) STOKERS AT THE SUTHERLAND PAPER COMPANY, KALAMAZOO, MICH., IN SAVINGS EFFECTED, EARN 182 PER CENT ON THEIR COST INSTALLED.

larger, power operated stokers of the underfeed and chain grate varieties; and 2nd., because it is these same overfeed stoker principles which are employed quite generally in the smaller semi-mechanical stokers in which the many paper mills operating power plants housing relatively small boiler units should be particularly interested. Sometimes, the coal pushers feeding the stoker are mechanically operated and at others the partially coked fuel is raked down over short stationary inclined upper grates leading to the stoker bar actuated grate sections to the rear of the furnace.

With special grates and various minor modifications, the same principles are employed in the overfeed varieties of stokers developed to burn wood chips and refuse of various kinds. These latter stokers have been extensively adopted by progressive wood-working concerns with large supplies of wood refuse to dispose of and should be profitable for certain pulp and paper mills.

Adaptability of Chain Grate Stokers

The third class of stokers, those of the chain grate variety, has won considerable favor in paper mill service, owing in large measure to its distinctive ability to burn successfully and economically all anthracite coals, coke breeze and even lignites. An excellent example of this is at the Bogota Paper and Board Company, Bogota, N. J.



Courtesy: American Engineering Company.

INSTALLATION OF TAYLOR UNDERFEED STOKERS AT THE ST. MAURICE PAPER COMPANY, LTD., CAP MADELINE, QUEBEC.

At this mill, chain grate stokers are installed under three 518-horsepower horizontal water tube boilers, a battery which replaced one of four 200-horsepower and two 300-horsepower boilers, all of which were formerly required to meet the load demands of the mill. With the newer installation, two of the 518-horsepower boilers are quite capable of carrying the entire mill load, the third being held as a reserve unit.

Commenting on this installation, the general superintendent of the plant states that the chain grate stokers permit the burning of much cheaper grades of fuel than had formerly to be employed. During two coal strikes which have taken place since the installation of these stokers, a full head of steam was maintained while burning the finest of screenings known as Silt. The old boiler plant had to be fired on No. 1 and No. 2 Buckwheat, while the fuel regularly employed for the more efficient plant with chain grate stokers is No. 3 grade anthracite, having a B.t.u. value of 11,500. It is also found that the old plant consumed some 40 per cent more coal and that with the more modern plant the turnover in personnel and the number of men required on the boiler room force have been quite materially reduced.

The stoker is not only capable of burning a wide variety of fuel, some of which usually present considerable difficulty to efficient combustion on other types of stokers, but is adaptable to boiler units of all sizes, large and small. They are made for forced draft operation and for natural draft and entail an investment, exclusive of coal and ash handling apparatus or brickwork, of from $100.00 per square foot of grate for a small stoker of a few square feet area to perhaps $36.00 per square fot for a large stoker of say 150 square feet area.

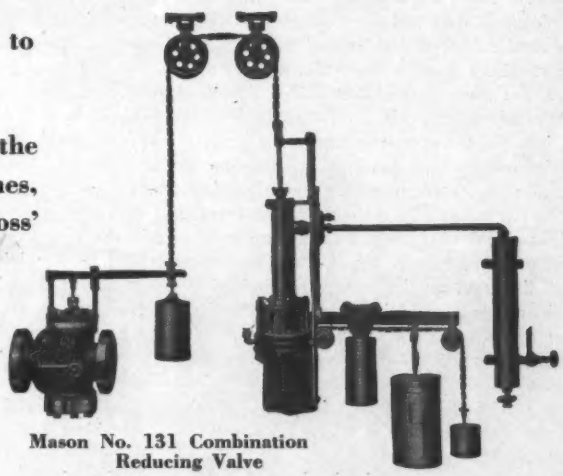
The ability of the stoker to burn low grade fuels with high efficiency, its capacity to meet normal and emergency load conditions and its proven dependability are perhaps well emphasized by the fact that one of the best known boiler manufacturers builds such a stoker and recommends it almost exclusively for paper mill power plant service. The particular advantage claimed for the stoker by this manufacturer is:

"That's the kind, Joe—"

—Mason Regulators can't be beat when it comes to gettin' accurate pressure control.

"Since we started puttin' Mason Regulators on the lines feedin' to the digesters and paper machines, we've cut down steam consumption and the 'big boss' says they're makin' better paper."

Write for a copy of Catalog No. 62 which gives a complete description of Mason Regulators for every pulp and paper mill service.



Mason No. 131 Combination Reducing Valve

Mason Regulators

MASON REGULATOR CO.
Boston, Mass.

San Francisco Office, 606 Howard Street
MASON REGULATOR CO. OF CANADA, LTD.
314 Notre Dame St., West, Montreal

1453

Especially recommended for use in paper mills for digesters and paper machines and for other installations requiring accurately controlled steam pressures that may be easily adjusted to meet varying requirements. High initial pressures and superheat do not affect its accuracy. Furnished for the following ranges of reduced pressure: 0 to 3 lbs., 2 to 25 lbs., 20 to 125 lbs., 100 to 250 lbs.

Smokeless combustion, due to even and continuous firing, the volatile gases being distilled on the forward portion of the grate underneath a hot ignition arch, passing over an incandescent fuel bed and thus being fully consumed. The progress of the fuel from the green coal at the front of the furnace to incandescent coke and finally to ash at the rear of the furnace is uniform and continuous, preventing the sudden liberation of gas.

Other advantages claimed are increased efficiency due to proper fuel combustion, often permitting a higher efficiency being realized with a poorer grade of coal than is obtained with a better grade of fuel in hand-fired furnaces; higher capacities than with hand firing; saving in labor where coal and ash handling apparatus can be advantageously used; adaptability to free-burning non-coking coal; and rugged construction of units which makes upkeep practically negligible.

These advantages, with the possible exception of that regarding the stoker's peculiar ability to burn anthracites with marked success, may be said to apply almost as forcibly to almost all other approved varieties of mechanical stokers, and with only minor modifications to be almost as descriptive of the advantages possessed by advanced systems of pulverized fuel combustion. It may be well, therefore, to repeat the admonition that the firing method for the paper mill to adopt is the one which will liberate the most heating units for a given outlay.

In this connection, approved modern stoker practice should most certainly be carefully investigated, before arriving at a final decision. The paper mill which remodels its power plant should also appreciate the fact that the attainment of full stoker dividends is only possible when the stoker installation is kept abreast of stoker development.

Brooklyn Standard Bag Co. Gets Judgment

In December, 1925, an involuntary petition in bankruptcy was filed in the United States District Court for the Southern District of New York, against the Select Paper Company, Inc., a corporation that had been engaged in the paper jobbing business on 23rd street, Manhattan. The Brooklyn Standard Bag Company, Inc., was one of the petitioning creditors.

At the same time the Brooklyn Standard Bag Company, Inc., instituted an action in the City Court of the City of New York, against the Select Paper Company, Inc., and Max G. Pepis, one of its officers and directors, to recover damages for an alleged fraud perpetrated upon them in procuring credit. In the bankruptcy there was no dividend to creditors, no discharge granted.

The Brooklyn Standard Bag Company's case in the City Court first came to trial in April, 1926, and after trial this complaint was dismissed on the theory that it having joined the petition in bankruptcy and filed its proof of claim, it had exercised an election of remedies so as to preclude it from proceeding in this action in fraud.

Jacob S. Barshay, the Brooklyn Standard Bag Company's attorney, thereupon appealed from the decision of the trial Justice to the Appellate term, procured a reversal, and the case was returned for a re-trial.

It was reached for trial in the early part of October, 1927, and the defendants failing to appear, an inquest was taken before a Judge and jury, and on October 15, 1927, judgment was entered in favor of The Brooklyn Standard Bag Company and against the Select Paper Company, Inc., and Max G. Pepis, for $2,097.05.

To Increase Export Prices of Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., November 7, 1927.—At a meeting of the representatives of Swedish, Norwegian, Finnish, German, Austrian, Netherland, and Belgian paper manufacturers it was decided to increase the export prices of de-luxe papers.

New York Trade Jottings

H. N. Spicer of the Dorr Company, New York, accompanied by Mrs. Spicer, has left for Australia, China and Japan to be gone for several months, in connection with his company's interests in those countries.

* * *

The New York Division of the Salesmen's Association of the Paper Industry held its regular weekly luncheon and meeting at the Canadian Club, New York, on Monday. Members were in good attendance and spent an enjoyable session together.

* * *

Work is progressing rapidly on the open price association investigation which is being made by the Federal Trade Commission as the result of a Senate resolution. While some of the field work has not yet been completed it is understood that a preliminary draft of the report is being made on some sections. It is considered probable that the report will be ready during the coming session of Congress.

* * *

The third annual offering of 7 per cent preferred stock to officers and employees of the International Paper Company and subsidiaries has been announced by President A. R. Graustein at a price of $100 a share. This figure, which includes the January 16 dividend, compares with $94 last year and $90 two years ago when the plan of employee subscription was perfected. Over 3,300 officers and employees of International Paper own shares in the company, the average holding being about five shares.

* * *

Hugh J. Chisholm, J. P. Hummel, Milton E. Marcuse, Felix Pagenstecher, and Norman W. Wilson, members of the executive committee of the American Paper and Pulp Association met with President Everest and Secretary Baker in New York Wednesday of this week to consider the Secretary's report on the Association's activities during the past six months and to plan for the industry's annual convention next February. Dr. Baker's report indicates that the Association is working aggressively in the interests of the industry along a well-defined program and is giving effective direct service to its members.

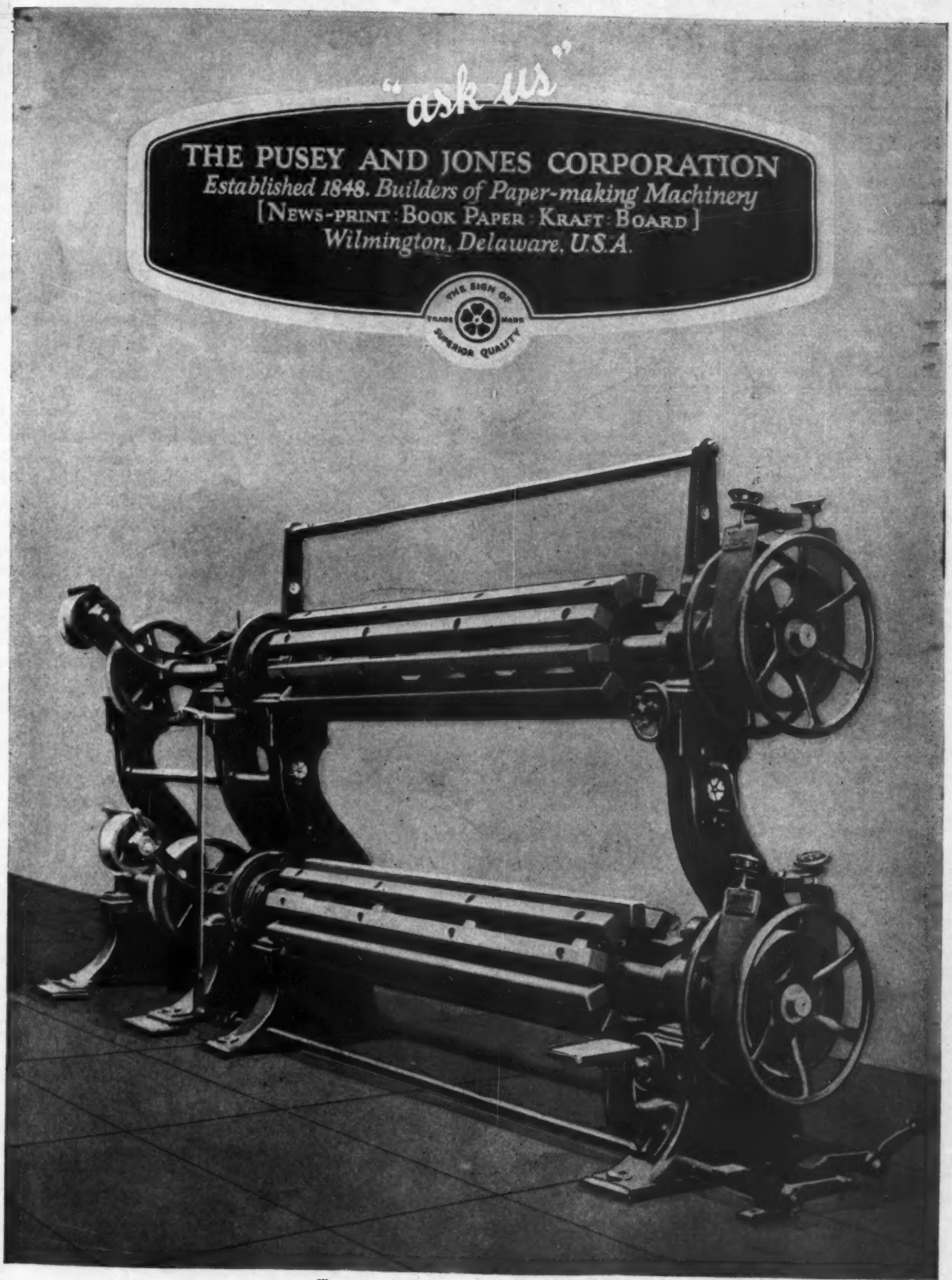
* * *

A trade war between the European and American chemical industries has been definitely launched with the recent formation of the German, French and British combined cartel, Dr. Charles H. Herty, adviser of the Chemical Foundation, declared last week at a meeting of the Salesmen's Association of the American Chemical Industry at the Machinery Club. The object of this European combination, said Dr. Herty, is the crushing of American export trade and the eventual invasion of the American market. The combination has a capital of almost $1,000,000,000, Dr. Herty added. He characterized reports that the object of the foreign combination was to protect Europe against American export activities as silly and said that the three nations involved were exporting almost a half billion dollars worth of chemicals a year as against the United States' exports of $171,000,000.

New News Print Machines in Canada

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., November 7, 1927.—During the first eight months of this year 13 news print machines in Canada with a daily capacity of 1,400 short tons went into operation, according to a report to the Department of Commerce from Consul General Halstead at Montreal. It is expected that the Anglo-Canadian Company will put into operation a 100 ton machine at the Limoilu mill during November.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THE PUSEY AND JONES CORPORATION
Established 1848. Builders of Paper-making Machinery
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Wilmington, Delaware, U.S.A.
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PAPER TRADE JOURNAL
ESTABLISHED 1872

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Vol. LXXXV New York, November 10, 1927 No. 19

BABSON INSTITUTE
Babson Park, Massachusetts.
November 1, 1927.

Editor, PAPER TRADE JOURNAL:

Permit me to compliment you on your issue of October 27 concerned chiefly with Mill Expansion and Mill Equipment. It is an extraordinary number revealing marvelous progress and a thoroughly sound condition in the paper industry. You are to be complimented upon the excellent manner in which you portray the present situation.

Very truly yours,
F. L. HOFFMAN,
Research Consultant.

COOPERATION FOR PAPER CENSUS

An announcement has just been received from the Bureau of the Census, Department of Commerce, Washington, to the effect that the census schedules for paper, wood pulp and converted paper products have been accepted in their entirety by the Bureau of the Census.

These schedules will be distributed to all paper and pulp mills and to converters immediately following January 1, 1928.

These new schedules are now in the hands of the Government Printing Office at Washington and just as soon as received by the Bureau of the Census a supply will be sent to the offices of the American Paper and Pulp Association.

Following receipt of these preliminary schedules the Association has been asked to cooperate with the Bureau of the Census in working out such descriptions and explanatory matter as may be necessary in order to facilitate the use of the schedules by the mills and to leave as little as possible for misunderstanding.

The new schedules are in a simplified form not requiring any great amount of time in their preparation being entirely different from the schedules required for tax and other reports.

These schedules will be for use only by the Bureau of the Census and by no other division or department of the United States Government, nor will they be available to any individual, corporation, state or otherwise. The reports will be collected in strictest confidence by the Bureau of the Census for the one purpose of compiling the totals for manufacture, employment, power, etc. for the industry by grades. No report will be issued by the Bureau of the Census which would in any way disclose the individual operations of any particular mill. For illustration, if there was but one mill manufacturing book paper in a state the report for that particular state so far as book paper is concerned would not be published separately but would be combined with reports from two, three or more other states thus completely burying the identity of that particular mill. This explanation is made in detail because of the belief in some quarters, that these reports are available to the American Paper and Pulp Association or to individuals or corporations and this most certainly is not the case. The interest taken by the American Paper and Pulp Association in the classification and grouping of the schedule as contained in these reports is solely for the purpose of benefitting the industry as a whole and not in any way to obtain individual figures, since these are not obtainable under any circumstances from the Bureau of the Census.

The census schedules used did not convey to the paper and pulp industry that information which is most essential in determining research in regard to trends, distribution, new uses, new developments and values of products individually and separately.

Unquestionably the new report forms will be received with favor by the paper and pulp industry. The main value to be received from the final compilation of the Census will, of course, be in the rapidity with which the Government publishes the combined reports. If the paper and pulp mills will report immediately after having received the new schedules early in the new year it will be possible for the Department of Commerce to publish the complete statistical details of the paper and wood pulp industry in the United States in a period of from four to six months. Heretofore these reports have been issued from twelve to fifteen months after the forms were sent out. It is believed that with the proper cooperation from all the mills and from all the associations and with the Government's present attitude toward the paper industry that next year these reports should be available not later than the middle of the year and possibly very much sooner, all of which, of course, would be to the advantage of the paper industry and toward its further stabilization.

WASTE FROM STRIKES IN BOX INDUSTRY

Statistics just filed by the New York State Department of Labor emphasize the tremendous wastes resulting from strikes in the paper box industry, according to Industrial Commissioner James A. Hamilton, who has just made public the result of data gathered by the Bureau of Women in Industry immediately following the nineteen weeks' strike ending in February, 1927. The study was made after a committee composed of Judge Bernard L. Shientag, Rabbi Goldstein and Harry L. Durning, appointed by Acting Mayor McKee to study and report on the merits of the strike, had held public hearings and felt that because of the lack of actual material it could not proceed. The committee asked the Bureau of Women in Industry to gather and publish the facts on the question involved in the strike and the findings are just made public.

The paper box industry is one of the last of the industries to change from hand to machine work. While there has been a decrease of 32 per cent in the number of workers between 1914 and 1925 the volume of business has increased. The contributing factor to this is the increasing utilization of machinery. From 1914 to 1925 the increase in output per wage earner increased 122 per cent and the horse power per wage earner more than quadrupled. The rapidity with which machine power is replacing man power accounts in part for the absorption of unskilled and semi-

skilled workers in the trade. Women constitute about two-thirds of all the workers, and men one-third.

As to the accident hazard of the industry, in round numbers about 350 paper box workers are injured each year in New York State, the largest number of accidents occurring on the corner staying machines with cutting and punching machines and die cutters coming next. The industry is, generally speaking, located in old buildings. Cheap rentals are of prime importance where large space is necessary to accommodate small value. For this reason physical working conditions in the industry are below the standard of many other industries. The very nature of the industry causes difficulty in keeping the workroom clean and orderly for there must of necessity be glue and paste and paper about. However, there was inexcusable neglect on the part of many of the manufacturers in regard to housekeeping standards.

The number of hours actually worked were comparatively short in the week selected for study. Seventy per cent worked 46 hours or less. Only 17 per cent worked 48 hours or more. No women worked more than 54 hours; 20 men were employed 54 hours, of whom five worked at least 60 hours. If the numbers of hours actually worked is contrasted with the number of hours workers were supposed to work it emphasizes the extent to which lost time existed in this week for only 38 per cent of workers were scheduled to work 46 hours or less, whereas 70 per cent actually worked these hours.

A larger proportion of women worked undertime than men. Two-thirds of the women and more than one-quarter of the men failed to work the scheduled hours in the plants in which they were employed. The amount of lost time is reflected in the earnings of the workers. The earnings of men for a given week were $32.15; for women $16. Actual earnings were less than $12 for 5 per cent of the men and 21 per cent of the women, while 10 per cent of men had earnings over $50 and less than 1 per cent of women. The weekly rates were higher in union plants than in non-union. The weekly rate of pay in union plants for men was $37.14 and in non-union $32.86. The weekly rate for women in union plants was $23 and in non-union $19.93.

Yearly earnings were available in 62 plants; the yearly earnings of men was $1,785 and for women $916. Sixteen per cent of the men and 83 per cent of the women earned less than $1,200, while 11 per cent of the men earned over $2,500.

High Grade Paper in Sweden Unsatisfactory

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., October 26, 1927.—For several years the Swedish manufacturers of high-grade paper have been complaining of the strong competition encountered from other European countries in the export markets and the low prices obtained. For long periods the mills had to be satisfied with working for the domestic requirements only. Hence, the cooperation with the manufacturers in other countries now established is greeted with great satisfaction and high hopes here. Evidencing the depression is the fact that while the total production of paper in Sweden increased by approximately 70 per cent during the years 1913 to 1925, inclusive, the output of high-grade papers during the same period increased by only 14 per cent, or from 12,885 metric tons (metric ton = 2,205 pounds) to 14,773 tons.

During recent years the high-grade paper industry has recovered somewhat from the post-war depression, the output of 5,966 tons in 1921 having nearly doubled in the succeeding year and shown a steady increase since that time. Exports of watermarked high-grade note, writing, and book papers in 1926 totaled 1,052 metric tons, while exports of the same grades, not watermarked, amounted to 1,136 tons. Less than 2 tons of these papers went to the United States, Brazil and Argentina being the leading purchasers of watermarked paper and Australia of that not watermarked.

September Paper Production Statistics

Due to the fact that there were two less working days in September than in August the total September production of all grades of paper ran about 4 per cent below August. The total Daily Average rate of production was 3½ per cent higher than the August daily average but this was offset by the fewer working days in September.

The daily average production for September exceeded that of August in all grades of paper with the exception of newsprint which ran about 3 per cent under the August daily average.

Hanging papers showed the most substantial gain over the August level of production. The daily average production for September was 18 per cent over that of August and the total monthly production was about 10 per cent over the month of August production.

Beginning with the September Summary, production and shipment figures are also expressed as a per cent of capacity. This feature is added in order to give a more accurate picture of the actual trend of the paper industry.

Wrapping paper is shown as running at 94 per cent of capacity and it must be remembered that this particular grade illustrates the activity in the companies reporting to the association but is much too high in regard to the industry as a whole.

The summary is prepared by the American Paper and Pulp Association as the central organization of the paper industry in cooperation with the Binders Board Manufacturers Association, Converting Paper Mills Association, Cover Paper Association, Newsprint Service Bureau, Wrapping Manufacturers Service Bureau, Wrapping Paper Manufacturers Service Bureau, Writing Paper Manufacturers Association and Paperboard Association.

The figures for September for identical mills as reported in August are:

Grade	Number of Mills	Production Net Tons	% of Normal	Shipments Net Tons	% of Normal	Stocks on hand End of Month Net Tons
News print	71	114,735	80	114,325	80	30,751
Book	66	91,340	84	91,483	84	54,509
Paper board	116	214.052	84	215,485	85	44,255
Wrapping	73	51,183	94	49,687	91	46,407
Bag	23	13,286	89	13,373	90	9,109
Fine	74	29,863	92	29,417	91	40,605
Tissue	46	13,734	100	14,235	103	15,244
Hanging	9	5,853	85	5,828	84	3,558
Felts and building	13	11,121	84	11,103	84	1,914
Other grades	60	21,893	77	22,484	79	17,290
Total—All grades		567,060	85	567,420	85	263,642

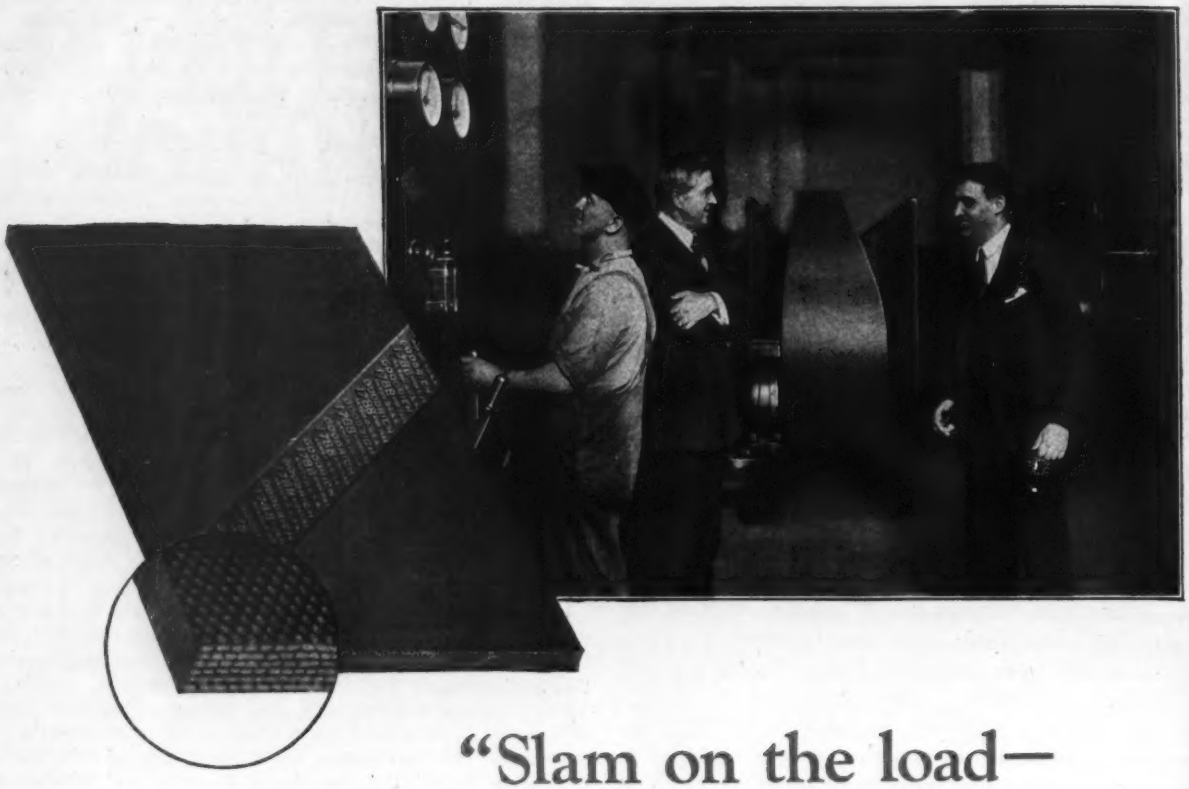
The total pulp production for September was 5 percent below that of August although the daily average production of September was 3 per cent above that of August. This is due to September having 25 working days compared with 27 working days in August.

Grade	Number of Mills	Production Net Tons	Used Net Tons	Shipments Net Tons	Stocks on Hand End of Month, Net Tons
Ground wood	91	781,454	786.748	22,421	102,528
Sulphite news	38	367,104	341.544	25,813	8,560
Sulphite, bleached	23	212.860	188.902	24.815	2,554
Sulphite, easy bleached	7	37,669	31,193	5,431	1,963
Sulphite, Mitscherlich	6	60.360	52,452	8,277	427
Sulphate	10	150,732	137,387	12,781	2,790
Soda	11	150,609	110,048	40,494	2,789
Pulp—Other grades	2	382	186	36	172
Total—All grades		1,761,170	1,648,460	140,068	121,783

Paper Market Satisfactory at Helsingfors

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., November 9, 1927.—A cablegram from Acting Commercial Attache Lyon, at Helsingfors, states that the paper market is satisfactory but that the demand for chemical pulp is rather light. Labor conditions are satisfactory.



"Slam on the load— SHE'LL PULL IT!"

Free bending of ply on ply.
No folds in the fabric.
No seams to open up.
No ply separation.
No bootlegging
Made of extra-heavy belt duck — 50% less stretch.
Compact weave of fabric gives better anchorage—fasteners won't pull out.
Not affected by atmospheric changes.
Longer life.

* * *

Send for folder of valuable horse-power and pulley data.

Goodrich "1788 Highflex" pulls the heaviest loads with power to spare — because its unmatched flexibility gives almost perfect pulley-contact!

It is built on a new principle — without fold or seam — no obstacle is opposed to free flexing as it passes over the pulleys!

Bootlegging cannot occur; because, in the case of very slight ply-separation at joint, entrapped air can escape at the edges.

While ideal for small-pulley, high-speed drives, "1788 Highflex" is an all-around heavy-duty belt. Its almost negligible stretch eliminates take-ups and shut-downs.

It's *the* economical, trouble-free belt—and it deserves a test on your most difficult drives!

THE B. F. GOODRICH RUBBER COMPANY
Established 1870 Akron, Ohio

Goodrich
"1788 Highflex" Belt

Section of the
Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Conducted by W.G. MacNAUGHTON, Secretary

The Effect of Hydrogen Ion Concentration on the Hydration of Cellulose*

By Howard W. Morgan and C. E. Libby

Introduction

It has been reported that the beating process employed in the manufacture of paper can be controlled by hydrogen ion measurements, but Taylor[1] was unable to confirm this statement and no experimental data on the subject appears in the literature.

The present work was undertaken to determine whether or not the hydrogen ion concentration of the solution in which a cellulose pulp was beaten had any effect on the rate of hydration.

Cellulose

In the experimental part of this thesis the term cotton cellulose will be used to designate a pulp prepared from cotton fiber which, while it approaches normal cotton cellulose in purity, has not been carried through the entire process for the preparation of standard cotton cellulose. The caustic soda treatment, usually employed for preparing cotton fiber, was omitted because of the possibility of inducing a preliminary chemical hydration of the cellulose. Crude wood cellulose prepared by bleaching chemical wood pulp will be designated as wood pulp.

In the literature review cellulose will be referred to, as far as possible, in terms which will designate the type of cellulose to which the particular author is referring.

Hydration

Hydration is the term used to describe the union of cellulose and water, this change being accompanied by a swelling of the cellulose. The only type of hydration that will be considered in this thesis is that which is produced by mechanical treatment of cellulose in the presence of water. Experimentally, this will be carried out by beating cellulose in a small pebble mill.

Hydrogen Ion Concentration

According to the electrolytic dissociation theory, all liquids of which water is a constituent contain free H and OH-ions. When the number of H and OH-ions are exactly equal, the solution is said to be neutral. If the number of H-ions exceeds the number of OH-ions, the solution is said to be acid. Conversely, if the number of OH-ions exceeds the number of H-ions the solution is said to be basic or alkaline. Hydrogen ion concentration means the actual concentration of H-ions in a given volume of solution. This concentration may be greater (acid) or less (basic) than that of a neutral solution.

Titration of a solution with a standard acid or basic solution does not give any indication as to the actual H-ion concentration. It measures the quantity of acid or base capable of ionizing to furnish H or OH-ions.

The determination of H-ion concentration does give an accurate measure of the amount of active acid or active base present. For example, 10 cc. of n/10 acetic acid would require the same amount of standard sodium hydroxide for neutralization as 10 cc. of n/10 hydrochloric acid, but the number of H-ions in the hydrochloric acid is over sixty times as great as the number of H ions in the acetic acid.

By the law of mass action:

$$\frac{\text{Concentration of H-ions} \times \text{concentration of OH-ions}}{\text{Concentration of undissociated molecules}} = \text{a constant.}$$

From this law it is apparent that as the H-ion concentration increases the OH-ion concentration must decrease, and vice versa Even in a strongly alkaline solution there are some H-ions and, for the sake of simplicity, it is therefore advisable to express both acidity and alkalinity in terms of H-ion concentration.

The electrical conductivity of a water solution is proportional to the amount of dissociated electrolyte it contains. Thus the amount of H-ions present can be measured by the conductivity of the solution. The H ion concentration of pure distilled water could be determined in the following way: By the law of mass action:

$$\frac{\text{Concentration of H-ions} \times \text{concentration of OH-ions}}{\text{Concentration of undissociated } H_2O} = \text{a constant.}$$

Since the undissociated water is relatively extremely large, it can be taken as a constant. Then,

$$\text{Concentration of H-ions} \times \text{concentration of OH-ions} = \text{a constant.}$$

By electrical conductivity measurements this constant has been found to be

$$\frac{1}{100{,}000{,}000{,}000{,}000} \text{ or } 10^{-14} \text{ at } 21^\circ \text{ C.}$$

Since in pure distilled water the number of H and OH-ions are equal, each must have a concentration of

$$\frac{1}{10{,}000{,}000} \text{ or } 10^{-7}.$$

Therefore the H ion concentration of distilled water is 10^{-7}.

* A Thesis submitted by H. W. Morgan in partial fulfillment of the requirements for the degree of Master of Science in the Department of Forest Chemistry in the New York State College of Forestry at Syracus University, Syracuse, N. Y.

[1] Taylor, W. A.—The Meaning of Hydrogen Ion Concentration and Its Application to the Paper Industry. Paper Tr. J., Oct. 29, 1925.

As this method of expressing H ion concentration is very inconvenient, Sorensen suggested the use of the term pH*, the pH value being the logarithm of the reciprocal of the H ion concentration:

$$pH = \log \frac{1}{(H^+)}$$

In the case of distilled water

$$pH = \log \frac{1}{10^{-7}}$$

$$pH = \log \frac{10{,}000{,}000}{1}$$

$$pH = 7.0$$

The pH value decreases with excess of H ions and increases with an excess of OH ions, the acid range being pH 0 to pH 7 and the alkaline range pH 7 to pH 14.

It must be remembered that, since pH is a logarithmic expression, a solution of pH 5 has ten times as many H ions as a solution of pH 6 and a solution of pH 4 has one hundred times as many H ions as a solution of pH 6.

Measurement of pH

The actual measurement of H ion concentration is not as complicated as the theory would lead one to believe. There are two common methods used, the electrometric and the colorimetric. The electrometric is the more complicated but it gives very accurate results. The colorimetric method is very simple and gives results of sufficient accuracy for use in control work.

The hydrogen ion concentration of a solution is measured electrometrically by measuring the potential developed between a hydrogen electrode and the solution. A noble metal coated with platinum black, which will hold large quantities of hydrogen, may be made to serve as a hydrogen electrode. When this electrode is saturated with hydrogen and immersed in a solution containing hydrogen ions, a difference of potential which is dependent on the concentration of H ions, is developed between the electrode and the solution. There is no method of measuring the potential developed on a single hydrogen electrode but if this electrode is connected with a standard electrode, the potential of which is known, the potential is easily measured. The "calomel electrode" or "half cell" is the standard electrode commonly used and is connected to the solution to be measured by a tube containing a solution of KCl. The difference in potential between the two electrodes is measured with a potentiometer. From this difference the potential at the hydrogen electrode and the pH can be calculated.

The hydrogen ion concentration is measured colorimetrically by the use of a series of indicators with well marked color changes covering a wide range of H ion concentration. The indicators are dyes in solution, each of which has a distinctive pH zone and shows a definite color change for each pH throughout this zone. The pH zone of each of these indicators is comparatively narrow, and a series of indicators whose pH zones overlap is needed. Measurements are made by adding the indicator to the solution to be measured and comparing the color developed to a standard of known pH.

Literature Review

Chemical and Physical Nature of Cellulose

Cellulose is classified as a carbohydrate because of its chemical composition $(C_6H_{10}O_5)n$, because of its special reactions, and because of a certain similarity to starch. Due to its slight chemical activity very little has been proven as to its molecular composition or structure. Apparently, there is only one characteristic group of atoms in the cellulose molecule, namely, the hydroxyl group. This group is characteristic of the aliphatic alcohols. The behavior of cellulose under numerous conditions is the same as that of this class of alcohols and allows it to be classified as an alcohol of this type.

Under certain conditions cellulose does enter into chemical reaction and it then behaves like an amphoteric compound exhibiting the properties of a *weak acid* and a still *weaker base*.

With few exceptions cellulose occurs in fibrous form in plant structures. With these fibers are associated other compounds varying in number and quantity according to the source of the fiber and to the processes of purification to which they have been subjected. The cellulose aggregate (fiber) is generally conceded to consist of a relatively large number of units, possessing a primary valence within themselves and held to each other in orderly arrangement by secondary valences.[1] Physical changes as adsorption, swelling, hydration, and peptization in cellulose solvents, do not affect the units themselves or the primary valences, but do disturb the secondary valences causing the units to be more or less separated from each other and a greater surface area exposed. This increase of surface area weakens the chemical resistance of the units.

Chemical changes, such as caused by hydrolysis, acetolysis and oxidation cause the units to break down and disturb the primary valences. Strachan[2] defines the cellulose mass comprising the fiber as a porous elastic gel having a regular structure.

Colloidal Nature of Cellulose

The state of dispersion of particles of a substance in solution determines whether or not it shall be classed as a colloid. If the particles are dispersed in the solvent to such a degree that they remain in permanent suspension, yet are not dispersed to that degree which characterizes molecular or true solutions, they are classed as colloids. A colloid may exist in either of two states in the "gel" state or in the "sol" state. According to Alexander[3] a gel is a system which possesses mechanical rigidity yet allows diffusion to proceed throughout its mass at a rate similar to that in liquids. It must therefore contain molecules which only vibrate about a mean position and which constitute a solid phase, and molecules which migrate throughout the system and constitute a liquid phase. A sol is a system which does not possess mechanical rigidity and contains only molecules which are free to migrate throughout the system and constitute a liquid phase.

A typical property of colloidal gels is the adsorption of liquids accompanied by swelling. A typical property of colloidal sols is the double refraction of a beam of polarized light. Cellulose is strongly double refracting, exhibits the phenomena of swelling and adsorption to a marked degree, and behaves like a typical colloid.

Cellulose fibers may be considered as amorphous solids or as colloidal gels with a high concentration of the solid phase. According to Briggs[4] cellulose when "beaten" in the presence of water (hydrated) adsorbs some of the water as colloidal water to form a hydrosol. Heuser[5] considers cellulose transformed to a cellulose slime by long mechanical treatment in the presence of water as a true colloidal solution or hydrosol.

Wood and Cotton Cellulose

It is now generally conceded that pure cellulose from cotton would be identical with pure cellulose from wood, if these two could be prepared. Celluloses have been prepared from these two sources which very closely resemble each other in chemical properties. Hawley and Wise[6] advance the theory that the cellulose units in the wood cellulose aggregate are identical with units in the cotton cellulose aggregate. They account for the difference in the behavior of the two by the presence of units other than

* The Journal of Biological Chemistry uses the symbol pH for hydrogen ion concentration in place of the symbol PH_{H^+}, originally used by Sorensen (1909). Clark (W. M. Clark—The Determination of Hydrogen Ions, 1922, p. 35) recommends the universal adoption of this symbol (pH) in place of the bothersome variations which have made their way into the literature. The following variations are found in the literature: ph, pH, Ph, PH, P_H, P_{h^+}, P_{H^+}.

[1] Hawley, L. F., and L. E. Wise: The Chemistry of Wood, Am. Chem. Soc., Monograph Series, p. 26.
[2] Strachan, James—Hydration of Cellulose in Papermaking, Proc. Br. Tech. Sect., London (1926), VI, part 2; Paper Ind., May, 1926.
[3] Alexander, Jerome—Colloidal Chemistry, Vol. I, p. 774.
[4] Briggs, J. F.—Papier-Fabr. Fest u. auslandsheft, 8 (1910), p. 46-49.
[5] Heuser, Emil—Textbook of Cellulose Chemistry, p. 5.
[6] Hawley, L. F., and Wise, L. E.—The Chemistry of Wood, Am. Chem. Soc., Monograph Series, p. 30.

cellulose (impurities) intermingled with the cellulose units. In carefully purified wood cellulose these foreign units have been removed without affecting the cellulose units or disturbing the primary valences to any large extent, leaving a cellulose which is chemically identical with cotton cellulose.

Hydration of Cellulose

"Hydration" * is the term used to describe the union of cellulose and water. "Cellulose hydrate" is a term that has been applied to the product of hydration. These are misnomers resulting from an erroneous belief that water taken on by cellulose was, at least under certain conditions, molecularly combined with cellulose. Ultimate analysis shows that the so-called cellulose hydrate is identical with normal cellulose and that the water is not chemically combined. It has been shown [7] that the vapor pressure curve for hydrated cellulose, during drying, is continuously variable, not only for adsorbed water but also for water of imbibition (hydration). This indicates that cellulose does not form a chemical hydrate in the sense of a compound of cellulose with water in definite molecular proportions.

Cellulose hydrate does show different physical properties from normal cellulose, as increased hygroscopicity, solubility in cellulose solvents, adsorption of dyes and cold Fehling's solution, and lowered resistance to chemical reaction. The greater reactivity of cellulose hydrate can be explained in most cases by the increase in the exposed surface area. Going back to the conception of a cellulose aggregate made up of regularly arranged cellulose units: [8] when the aggregate becomes hydrated the units become more widely separated, exposing the surface of more units to attack by adsorbed substances.

The cause of hydration or the exact process of hydration is not at all clear. Some of the theories that have been advanced to account for the swelling of colloidal gels, and which have a bearing on the hydration of cellulose are the following: [9]

1. The capillary theory, in which it is assumed that swelling takes place by the passage of liquid through small pores.

2. The osmotic theory, in which liquids pass into the substance, the swelling being due to the difference in osmotic pressure between the external and internal solutions.

3. The solid solution theory of Katz in which it is assumed that the addition of a miscible liquid to colloidal solids forms a solid solution.

4. The electrostatic repulsion theory. A gel consists of a sponge-like structure with many minute pockets filled with water. H- or OH-ions, respectively, are adsorbed on the surface of these pockets. The colloid particles become charged with electricity of the same sign. Owing to electrostatic repulsion, increase in size by imbibition of solution takes place.

5. The diffusion-pressure theory of Proctor and Wilson. The force producing the hydration is due to the diffusion of the necessary excess concentration of diffusible ions of the gel phase over that of the external solution.

The water that is taken on during hydration undoubtedly is not all held in the same way.

Bancroft [10] classes the water that is held by pulp as (1) water held in capillary spaces, (2) adsorbed on surface of fibers, (3) water dissolved in the fiber, (4) and some water which may be held in cell cavities. That water plays an essential part in hydration is shown by the failure of cellulose to hydrate on beating in alcohol or petroleum. [11]

There are numerous factors which influence the rate of hydration. Strachan [12] considers that there are sufficient experimental data to show that:

1. The velocity of imbibition (hydration) is represented by a logarithmic graph similar to that in the case of other elastic gels.

2. The velocity of imbibition is directly proportional to the specific external surface of the mass and to the increase of surface due to swelling.

3. The velocity of imbibition is increased by pressure and cold but diminished by heat.

4. The velocity of imbibition is accelerated or retarded by the presence of other substances in dilute solutions.

Esselen [13] considers that two changes take place during hydration by beating. In the first place there is hydration, and, in the second place, hydrolysis. The latter proceeds much more slowly than the first. The first step in hydrolysis is the formation of soluble, mucilaginous dextrins, these are adsorbed by cellulose to form hydro-cellulose.

In general, for unbleached pulps, the rate of hydration decreases in the following order: [14] Mitscherlich sulphite, kraft sulphate, Ritter-Kellner sulphite, soda, cotton, and mechanical wood pulp. The rate of hydration varies considerably with the species of wood, the degree and method of cooking, and the degree of bleaching.

Cotton pulp has a greater tendency to form fibrillae than wood pulp, though wood pulp is more easily disintegrated by mechanical treatment. [14] The coniferous wood fiber consists of an inner layer of spirally arranged strands and an outer layer that does not split. After prolonged beating the outer layer appears as irregular fragments, and the inner layer as a tangled mass of cloudy gelatinous filaments. Fibrillae are split off the outer surface of the cotton fiber upon beating.

Commercial Hydration.

Cellulose may be hydrated in several ways: (1) mechanical comminution and pressure in the presence of water, (2) treatment with solutions of salts, bases, or acids, (3) regeneration from cellulose esters, (4) precipitation from cellulose solutions. Cellulose will take on water to some extent when allowed to stand in it for a long time. This water is largely of a hygroscopic nature, however.

The majority of cellulose pulps that are used in the manufacture of paper are hydrated by beating in a Hollander.

The strength of a sheet of paper made from beaten pulp is due to two factors, namely, the actual fiber strength and the strength due to the cementing effect of the hydrated cellulose fiber. [15] In a sheet from unbeaten pulp the break is due almost entirely to the separation of the fibers one from the other. When the pulp is beaten the strength of the individual fiber decreases, due to mechanical disintegration, and the strength, due to the cementing effect, increases. When the maximum strength is reached these two strength factors are practically balanced.

The increase of the cementing factor is the object of hydration. Hydration alone has little effect upon the ultimate strength of the individual fiber. However, the mechanical treatment to which the pulp is subjected in order to produce hydration does materially lower the fiber strength, by the cutting of the fiber and "brushing" it out into fibrillae. According to Strachan, [16] the main factor that operates in beating is the increased specific surface area exposed. Practically all of this increase is due to the disintegration of the

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* Schwalbe (C. G. Schwalbe, Ullman's Enzyklopadie Tech. Chemie, 3 (1916), 333) suggests the term "swollen cellulose" in place of "hydrated cellulose." However, he still uses the term "hydrated cellulose" to avoid further confusion.
Heuser (Chemistry of Cellulose, p. 19) agrees with Schwalbe that "swollen cellulose" is the more accurate term.
Schorger (Chemistry of Cellulose and Wood, p. 196) considers the term "swollen cellulose" inadequate and prefers the term "gelatinized cellulose."
The terms "hydration" and "hydrated cellulose" will be used in this thesis since they are still the most used, especially in industrial fields.

[7] Strachan, James—Hydration of Cellulose in Papermaking, Proc. Br. Tech. Sect., London (1926), VI, part 2; Paper Ind., May, 1926.
[8] Hawley, L. F., and L. E. Wise—The Chemistry of Wood, Am. Chem. Soc., Monograph Series, p. 26.
[9] Schorger, A. W.—Chemistry of Cellulose and Wood, p. 202.
[10] Bancroft, W. D.—Applied Colloidal Chemistry, p. 76.
[11] Schorger, A. W.—Chemistry of Cellulose and Wood, p. 233.
[12] Strachan, James—Hydration off Cellulose in Papermaking, Proc. Br. Tech. Sect., London (1926), VI, part 2; Paper Ind., May, 1926.
[13] Bogue, R. H.—The Theory and Application of Colloidal Behavior, Vol. II, p. 635.
[14] Schorger, A. W.—Chemistry of Cellulose and Wood, p. 233.
[15] Genberg, G. P.—Strength Testing of Chemical Wood Pulp, Tech. Assoc. Papers, Series 8, p. 41.
[16] Strachan, James—Hydration of Cellulose in Papermaking, Proc. Br. Tech. Sect., London (1926), VI, part 2; Paper Ind., May, 1926.

fiber into fibrillae. It is in these fibrillae that the rate of imbibition of water is greatest.

Effect of Various Chemicals on Hydration

The cellulose fiber according to Bovard[17] consists of a sponge-like structure of colloid particles, strongly charged negatively and held together by capillary attraction. This structure has the power of adsorbing hydroxyl ions and, since the latter are more abundant in an alkaline solution, adsorption is more rapid in an alkaline solution. Adsorption of the OH ions increases the degree of dispersion of the units or particles in the cellulose aggregate. Therefore, since the rate of hydration increases with an increase in the degree of dispersion, hydration is accelerated by the presence of OH ions in solution.

According to Esselen[18] cellulose adsorbs both acid and bases from dilute solutions. It also readily adsorbs basic oxides from solutions of Pb, Zn, Cu, Sn, Al, Fe, Cd, Ba and Ca salts. He does not make any prophecies as to mechanics of this adsorption. He believes that there are not sufficient experimental data to prove whether the adsorption is due to the presence of non-cellulosic material as impurities but it seems reasonably sure that cellulose itself does adsorb certain materials from solution.

Schwalbe[19] says that the presence of Na_2SO_4 in sulphate liquor, as every other salt * which is present in a definite concentration in the solution, seems to retard hydration.

Mansfield and Stephenson[20] beat bleached sulphite pulp in a pebble mill for a given time with the addition of varying amounts of different chemicals to the solution. They made test sheets and measured the bursting strength with a Mullen tester in pounds per square inch, the per cent elongation, and the tensile strength in kilograms with a Schopper tensile tester. They found an increase in bursting strength, over that obtained when the pulp was beaten with water alone, when Na_2CO_3, NaOH, NH_4OH, and $ZnCl_2$ were added to the solution, showing that these compounds accelerate hydration. All of the compounds employed in the above experiments belong to the class which are strongly ionized in water solution to give a high concentration of OH-ions. H_2SO_4 and C_2H_3OOH acids which give a high concentration of H-ions in water solution produced no appreciable change in strength. The same was true in the case of NaCl, a neutral salt.

The following table gives the results obtained by Mansfield and Stephenson:

Solution used	Bursting strength lb. per sq. in.	Solution used	Bursting strength lb. per sq. in.
H_2O	51.8	5% $ZnCl_2$	70.4
1% Na_2CO_3*	77.4	5% NH_3	73.6
3% Na_2CO_3	86.0	10% NH_3	84.2
5% Na_2CO_3	68.6	10% NaCl	52.0
10% Na_2CO_3	88.4	5% H_2SO_4	51.4
5% NaOH	72.2	15% C_2H_3OOH	50.6

Using a small experimental beater, these investigators found that the same strength could be developed in a pulp sheet by reducing the beating time one-fourth and adding 5 per cent Na_2CO_3.

There are several factors, other than the degree of hydration, which affect the strength of the pulp sheets which were not taken into consideration in this work, namely, pressure applied to the wet sheet, temperature of drying, humidity at which the Mullen tests were made, and variation in the weight of the test sheets. Variation in pressure applied to sheets and in humidity at which tests are made, especially, produce a marked variation in results obtained. For this reason it seems that these results can only be used as a general indication as to what may happen.

Sutermeister[21] checked the work of Mansfield and Stephenson, and while he found an increase due to the addition of these chemical compounds, the increase was much smaller.

Sutermeister's results were as follows:

Pulp	Solution used	Bursting strength lb. per sq. in.
1	H_2O	49.6
	0.2% NaOH	53.5
	5.0% Na_2CO_3	49.3
2	H_2O	38.6
	0.5% NaOH	46.2
	3.0% Na_2CO_3	45.8

Sutermeister accounts for the difference in results by the difference in humidity at which the sheets were tested, the personal factor, and the difference in the previous treatment of the pulp used, as in cooking and bleaching.

The effect of treating pulp with dilute solutions of chemicals before beating was also determined by Sutermeister. He used soda and sulphite pulps which had been dried, also samples of these pulps which had been stored in wet laps. The pulp was allowed to stand in the solutions for a period of one to three weeks, after which it was washed free of chemicals and beaten in the usual way in a ball mill. The bursting strength of sheets made from this pulp was determined.

In no case did this treatment cause an increase in the strength of the soda pulp. Treatment with $CaCl_2$, NaOH, NaCl and $ZnCl_2$ did cause an increase in the strength of the sulphite pulp. Bleach liquor and HCl caused the strength of dried pulp to increase until it was equal to that of the wet pulp. Further treatment with these compounds caused a marked decrease in strength. Tannic acid caused a decrease in the bursting strength in all cases.

TABLE OF TREATMENTS AND BURSTING STRENGTH

	Bursting strength, pts.			
	Soda fiber		Sulphite fiber	
Treatment given:	1 week	3 weeks	1 week	3 weeks
Blank { dry	22.2		42.6	
Blank { wet			50.7	
Water only	23.0	23.5	49.1	55.9
2% NaOH	19.5	19.1	40.8	50.2
3% Tannic acid	17.2	20.2	35.7	42.2
Weak bleach solution	11.8	7.9	50.1	34.4
2% $CaCl_2$	21.3	21.2	51.6	52.3
5% NaCl	21.1	22.5	49.3	58.2
1% $ZnCl_2$	20.4	20.0	54.1	52.8
2% HCl	19.1	18.8	52.1	46.5

Schwalbe[22] investigated the use of a preliminary treatment of pulp with acids and bases to accelerate the formation of slime in a beater. While the formation of slime is the result of both hydration and hydrolysis, his results do throw some light on the question of chemical hydration. He found that a preliminary treatment with small amounts of NaOH did accelerate slime formation. Cotton and chemical pulps were given a mild treatment in the beater with several acids and then allowed to stand in a stock chest in the acid solution for twelve hours. This treatment caused a decided increase in the swelling of the fibers. The pulp treated in this manner hydrated much more rapidly on beating but the strength of the resulting paper was materially lowered. It seems evident, due to the decrease in strength, that the acceleration of slime formation, by acid treatment, is largely a case of acceleration of hydrolysis rather than of hydration.

Determination of the Degree of Hydration

The degree of hydration of a pulp can be determined by its viscosity in cupro-ammonium solution, by the rate of hydrolysis, by the copper hydrate number, by the rate of adsorption of NaOH or mordant salts, by the use of sedimentation testers, and by the comparative bursting strength of sheets made from the pulp.

The viscosity of cupro-ammonium solutions of cellulose is no a reliable method of measuring the degree of hydration of a cellulose pulp. This determination requires much time and careful manipulation in order to secure results that are at all comparable.[23]

The measurement of the rate of adsorption of NaOH and mordant salts is a slow process and does not give very satisfactory results.[23]

[17] Bovard, W. M.—Paper, 22, 3 (1918), 11-16.
[18] Bogue, R. H.—The Theory and Application of Colloidal Behavior, Vol. II, p. 631.
[19] Schwalbe, C. G.—Degree of Hydration and Degree of Beating, Paper Tr. J., June 14, 1923.
* It seems probable that Schwalbe is referring to neutral salts in this statement.
[20] Mansfield, E. K., and J. N. Stephenson—Experimental Studies in Beating Pulp, Paper, Nov. 1, 1916, p. 17.
* 1% Na_2CO_3 based on the air dry weight of the pulp.
[21] Sutermeister, Edwin—Beating Tests, Paper, Dec. 11, 1918.
[22] Schwalbe, C. G.—Accelerating the formation of slime in the beater, Paper Tr. J., Jan. 22, 1925.
[23] Schwalbe, C. G.—Degree of Hydration and Degree of Beating, Paper Tr. J., June 14, 1923.

The use of the copper hydrate number is very satisfactory with cotton or with rag stock, when impurities are absent. It is not reliable with wood pulps since the other components besides cellulose have a reducing action on the Fehling's solution.[23]

The use of sedimentation testers to determine the degree of hydration of a pulp, depends on the fact that the greater the degree of hydration the slower the rate of drainage of water through a mat of the pulp. Two popular testers of this type are the Green's slowness tester and the Schopper-Riegler instrument. The results obtained with these instruments are affected by other factors than hydration, as kind of pulp and the degree to which the fibers have been "cut" and "brushed" into fibrillae by beating. These instruments give good comparative results when all measurements are made on one kind of pulp and all factors influencing the test, except hydration, are kept constant.[24]

The bursting strength of a pulp sheet is directly proportional to the degree of hydration provided other factors, as kind of pulp, degree of fiber disintegration, and amount of ash in the sheet are constant. The bursting strength is measured with a Mullen or an Ashcroft tester and expressed in pounds per square inch or as the unit weight test.

(Sum of 32 tests made on four sheets ÷ by twice the weight of the four sheets in grams = unit weight test.)

It is preferable to express results as unit weight tests since this takes into consideration variations due to variation in weight of the sheet. Sutermeister[25] mentions the following factors which influence strength tests, as made on pulp beaten in a pebble mill: time of beating, the temperature of stock during beating, the effect of drying the stock before beating, and the variation in thickness and weight of the pulp sheet. He found that the higher the temperature, during beating, the lower was the rate of hydration, also that drying the pulp in air lowered the maximum hydration.

The last two methods, namely, the slowness test (sedimentation test) and the unit weight test, while they are not very sensitive and do not give entirely comparable results for different pulps, are sufficiently sensitive to show any variation in hydration which is large enough to be of consequence in the manufacture of paper.

The Application of pH Concentration to Hydration of Cellulose

There is no reference in the literature to any investigation concerning the effect of hydrogen ion concentration on the hydration of cellulose fibers.[26] However, it is logical to expect that pH does have an influence on this change because the beaten fibers of paper stock possess the characteristic properties of colloids and, as mentioned before, colloids have very large surface areas and a tendency to adsorb other bodies. This tendency is partially due to surface tension and partially due to electrical attraction.[27] Adsorption may take place if the particles are not electrically charged but is more marked if the bodies are oppositely charged. The disperse particles of cellulose are negatively charged,[27 28] therefore, if the right concentration of positive charges is obtained in the beating process, greater adsorption and thus hydration may be expected.

It must not be thought that pH concentration is all-sufficient. In the case of rosin sizing the pH for maximum precipitation of rosin on the fibers has been determined by several investigators. The pH is not the important factor, however. It has been shown[27 29] that the concentration of alum which gives this pH is the cause of maximum sizing. Very little sizing effect is obtained when compounds other than alum are used to obtain this pH.

[23] Schwalbe, C. G.—Degree of Hydration and Degree of Beating, Paper Tr. J., June 14, 1923.
[24] Schorger, A. W.—Chemistry of Cellulose and Wood, p. 238.
[25] Sutermeister—A Beating Test for Papermaking Fibers, Paper, Nov. 10, 1915.
[26] Taylor, W. A.—The Application of Hydrogen Ion Control to the Manufacture of Pulp and Paper, Tech. Assoc. Papers, Series 9, p. 38.
[27] Shaw, M. B.—Hydrogen Ion Concentration in the Paper Mill, Paper Tr. J., Sept. 3, 1925. p. 60.
[28] Shaw, M. B.—Hydrogen Ion Concentration in the Paper Mill, Paper Tr. J., Sept. 3, 1925. p. 60.
[29] Bovard, W. M.—Paper, 22, 3 (1918), 11-16.
[30] Kassing, B. L.—Factors Influencing Rosin Sizing, Thesis, N. Y. S. C. F.

(To be concluded)

Start Work on Machine for Great Lakes Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., October 31, 1927.—Representatives of the Bagley & Sewall Company, manufacturers of paper mill machinery, Watertown, stated today that the company had just started work on the largest paper making machine ever manufactured in this district. The mammoth machine is being built for the Great Lakes Pulp and Paper Company, of Minneapolis, and is to be installed in the new mill of the firm at Fort William, Ont., opposite Port Arthur.

The latest product is to be a 264 inch wire machine which is within a short space of the largest paper machine in the world. It will have a speed of 1200 feet a minute. The only machines larger than the one now being constructed are at Gatineau mill near Ottawa, these being of the 270 inch type. The Watertown company already has one of its machines in a plant of the Great Lakes Company. A 246 inch machine was constructed at the Bagley & Sewall plant two years ago. The Great Lakes Company is a subsidiary of the Backus-Brooks Company, one of the largest paper manufacturing companies in the world.

The new machine will be completed by the first of January. At first it was thought that it would be necessary to make enlargements to the foundry and other departments because of the size of the parts of the new machine but it has been found that it can be manufactured under present conditions without alterations to the plant. A number of additional men have been taken on at the plant and several departments are running nights to get the machine out in time so that it can be assembled by January.

R. S. Hatch Joins United Filters

Owing to the increased business in the pulp and paper field the United Filters Corporation has found it necessary to add another paper technologist to its organization.

They have been fortunate in securing the services of R. S. Hatch, who brings with him many years experience in various branches of the paper industry.

Mr. Hatch, who was trained as a mechanical engineer, has been actively engaged in superintending and managing mills making a wide variety of papers and his experience makes him particularly well fitted to meet the problems which his new connection will bring. He has been an active member of the Technical Association of the Pulp and Paper Industry since its organization and served for two years as president. His first hand knowledge of the practical problems which confront the paper maker combined with his ground work of technical training puts him in a position to appreciate to the fullest extent the many phases involved in the prevention of paper mill losses and his technical knowledge will serve well to back up his practical experience.

Mr. Hatch will make his headquarters at the New York office of the United Filters at 25 Broadway, where he will be available for consultation on the application of American Filters in working out some of the many problems which confront the modern paper maker.

Changes in Champion Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

CARTHAGE, N. Y., October 31, 1927.—A number of changes have just been effected in the executive board of the Champion Paper Company of this place. A. W. Bronk, of Bellows Falls, Vt., has been apointed superintendent, according to announcement by Corwin T. Jewell, general manager of the St. Regis Paper Company, which organization controls the Carthage concern.

Other important changes include the appointment of Herbert Hall to succeed J. C. Monty who recently tendered his resignation as superintendent of the mills at Norfolk, Norwood and Raymondville and the designation of E. B. Cole as superintendent of the Norfolk mill. Mr. Cole has been superintendent of the Champion mill. Mr. Bronk, who is new in the services of the St. Regis Company, is an expert on kraft paper. He has been employed for some time by the Moore & Thompson Company.

Official Paper Testing Methods*

of the Technical Association of the Pulp and Paper Industry

Official Method for Determining the Folding Endurance of Paper

I. APPARATUS.

The testing instrument shall consist of:

(1) Two horizontally opposed jaws which are constrained to move in the same straight line without rotation. The jaws shall be suitably supported as by frictionless rollers (see note). The jaws shall be adapted to maintain the ends of the specimen in the same vertical plane. There shall be provided a means for holding the jaws in a fixed position while inserting the specimen and a means for subsequently subjecting the specimen to a maximum tension of 1 kg. and a minimum tension of approximately 0.8 kg. alternately as the specimen is folded and unfolded.

Note—Cylindrical rollers are preferable to the knife-edge rollers some times used for the purpose as the edges of the latter frequently become flattened, causing increased friction and consequent error in the results.

(2) A vertically slotted, horizontally reciprocating blade mounted between the jaws and moving transversely to the line of motion of the jaws in such manner that the edges of the slot shall push the specimen alternately to either side of its neutral postion in the line of motion of the jaws by a distance of 10.16 mm. (0.400 inch.) The slotted blade shall have a thickness of 0.50 mm. (0.020 inch) and the edges of the vertical slot shall be rounded to a cylindrical surface. The vertical extension of the slot shall be such as to extend beyond the upper and lower edges of the specimen.

(3) Four rollers rotating on vertical axes mounted in a quadrangle about the central position of the vertical slot in the reciprocating blade so as to cause the specimen to fold around the edges of the vertical slot and lie against the blade as it moves back and forth. These rollers shall be so mounted that the reciprocating blade bisects the clearance between rollers in one direction and the specimen in its neutral position bisects the clearance between rollers in the transverse direction. The minimum clearance between the blade and the rollers on either side shall be 0.38 mm. (0.015 inch) and the minimum clearance between rollers in the space occupied by the specimen shall be approximately 0.50 mm. (0.020 inch). The design throughout shall be such as to entail a minimum of friction in the moving parts.

(4) A means of imparting harmonic motion of constant period to the reciprocating blade. A power driven apparatus is preferable.

(5) A device for registering the number of double folds required to sever the specimen.

II. SPECIMENS.

Specimens to be tested shall be cut accurately in each principal direction of the paper with a width of 15 mm. (0.59 inch) and a length such as to insure a firm grip in the jaws without buckling. They shall initially be free from folds or wrinkles or blemishes not inherent in the paper. The edges of the specimens must be clean-cut and parallel to the opposite edges. The specimens shall be so selected from the sample secured by the official sampling method as to be representative of the sample.

III. METHOD.

With the vertical slot of the reciprocating blade in its central position the specimen shall be placed in the slot and the ends clamped firmly and squarely in the jaws with the surface of the specimen lying wholly within the plane. The specimen shall be handled by the ends and not touched with the hands in the region which is to be folded. The specified tension shall then be applied and the specimen folded at a uniform rate of approximately 120 double folds per minute until it is severed at the crease. The number of double folds required to sever the specimen shall be recorded. Not fewer than 10 strips cut in each principal direction of the paper shall be tested. Folding endurance tests shall be made on paper conditioned according to the official method for conditioning, and in the atmospheric conditions therein specified.

IV. CALIBRATION.

Two pairs of bow dividers, a 1 kg. weight, and preferably a suitable medium, such as a balanced frictionless pulley or bell-crank lever, for applying deadweight load to a horizontally moving jaw are required for the calibration.

All working parts shall be in good condition, well oiled and in proper adjustment. Especial attention should be given to the condition of the supporting rollers, particularly if they are of the knife-edge type, replacement being necessary if the edges are worn flat at any point.

The calibration shall be made essentially as follows:

On each jaw make two very small punch-marks in a line parallel with the direction of motion of the jaw, one punch-mark being made on the shoulder of the jaw and the other on the adjacent shoulder of the fixed jaw-stem guide. Clamp in the jaws, according to procedure under METHOD, a strip of celluloid 0.005 inches thick. Revolve the driving wheel until the slot in the folding blade is farthest from its central position and then apply the tension to the jaws by pulling out the two spring housings simultaneously. Adjust one of the bow dividers to accurately span the interval between the punch-marks on one jaw and adjust the other pair of dividers similarly to span the interval between punch-marks on the other jaw. Take care that these divider settings remain unchanged during the calibration. Release the spring tension, revolve the driving wheel a half revolution, again apply the spring tension and see if the intervals are the same as before. If not the crank pin is probably worn and must be put in repair so that each interval is the same for the two antipodal positions. Apply a deadweight load of 1 kg. (see note) to one of the jaws, tap apparatus lightly and allow the stressed jaw to come to a stable position. Adjust the tension of the spring until the interval between the two punch-marks is exactly the same as for the original setting of the dividers for that jaw. In a similar manner adjust the spring tension of the other jaw so that a deadweight load of 1 kg. produces the interval between punch-marks for which the other dividers were set. This procedure insures that the maximum tension on the specimen being folded is exactly 1 kg. Put a specimen in place in the tester and apply the tension as for a folding test. Turn the driving wheel until the folding blade is farthest from its central position as at first and see if the two intervals are the same as for the setting of the respective dividers. If so the tester is ready for use. If one interval is greater and the other less than the setting of the respective dividers it is impossible to calibrate the instrument until the jaw springs have been replaced by matched springs. The folding tester shall be calibrated at intervals of not more than 30 days.

Note—The deadweight load may be applied in the horizontal normal operating position by means of a balanced bell-crank lever having knife edge suspension or by means of a frictionless pulley over which is passed a strong thread or fine wire, one end of which is fastened in the jaw and the other attached to a kilo-

* Additional methods that have been formally adopted by letter ballot of the members of TAPPI. See also Paper Trade Journal, September 9, 1926, and January 27, 1927.

gram weight. In the latter case it is necessary to take one of the jaws with its support out of the way while calibrating the other, and to take care that the wire or thread does not touch any part of the apparatus other than those specified. Or if desired the jaw to be calibrated may be removed together with housing and support, taken apart so as to obtain the weight of the jaw, reassembled and clamped in a vertical position, and stressed by a deadweight which together with the weight of the jaw is equal to 1 kg.

V. Report.

The results shall be reported in double folds. The average, the maximum and the minimum folding endurance for both of the principal directions of the paper shall be reported.

VI. Additional Information.

Reference: Folding Endurance of Paper, F. P. Veitch, C. F. Sammet and E. O. Reed. Paper, Volume XX, No. 12, May 30, 1917.

Resistance to Folding, W. Herzberg, Chemical Abstracts, Volume XIV, page 2262, July 20, 1920.

Paper Testing Methods, TAPPI, 1922. Bureau of Standards Technologic Paper.

Calibration and Adjustment of Schopper Folding Tester, F. T. Carson (describes use of bell-crank lever for calibrationg).

Official Method for Analysis of Mineral Coating of Paper

I. Specimen.

The specimen for test shall consist of the equivalent of not less than 0.2 grams of mineral coating obtained by separation from the basic paper as described in the official method for determination of amount of coating.

II. Method.

The method of analysis is the same as described in the official method for analysis of mineral filler. If the coating yields an acid soluble portion containing calcium, aluminum, and sulphate, the presence of satin white is indicated. If calcium is found but no sulphate, and if the coating gives an effervescence with hydrochloric acid, it contains chalk or whiting ($CaCO_3$). If the coating contains carbonates, is free from calcium and magnesium, and contains acid-soluble barium, the presence of barium carbonate ($BaCO_3$) is indicated. The presence of barium and sulphate in the portion insoluble in hydrochloric acid indicates blanc fixe or barytes (barium sulphate, $BaSO_4$). The presence of silicate in the acid-insoluble portion (1), with aluminum indicates clay, and (2) with magnesium indicates talc or asbestine.

III. Additional Information.

Reference—Technical Methods of Analysis, R. C. Griffin.

Official Method for Analysis of Mineral Filler in Paper

I. Specimen.

The specimen for test shall consist of not less than 0.2 grams of ash obtained from the paper by the official method for determining the ash of paper.

II. Method for Qualitative Determination.

Warm the ash in a small quantity of dilute hydrochloric acid. An effervescence indicates the presence of carbonate. If there is an insoluble residue, decant the acid solution through a filter paper and repeat the operation twice, finally transferring the residue to the filter paper and washing it thoroughly.

Add an excess of ammonium hydroxide to a portion of the acid solution. A white, gelatinous precipitate shows the presence of aluminum. Filter off any such precipitate and add a solution of ammonium oxalate. A white granular precipitate indicates calcium. To another portion of the acid solution add a few drops of barium chloride and warm. A white precipitate will form if a sulphate compound is present.

Dry any residue from the acid treatment of the ash, burn off the filter paper in a platinum crucible, and add to the contents of the crucible, a fusion mixture consisting of equal parts of sodium and potassium carbonates. Fuse to a clear mass, cool, transfer the fusion to a beaker and heat gently with water. When the mass is thoroughly disintegrated, filter and wash any residue thoroughly with hot water. To the filtrate add an excess of hydrochloric acid, evaporate to dryness, and treat the residue with a warm solution of dilute hydrochloric acid. A white, transparent, flaky precipitate shows the presence of silica. Filter off such precipitate and add a solution of barium chloride when a white precipitate will form if an insoluble sulphate, such as barium sulphate, was present in the paper. Dissolve the water-insoluble portion of the fusion with dilute hydrochloric acid. Add to the solution an excess of ammonium hydroxide and boil. A white gelatinous precipitate shows the presence of aluminum. Filter off any such precipitate and add ammonium carbonate to the filtrate, a white precipitate occurring if barium is present. Filter and add an excess of ammonium phosphate and stir thoroughly after cooling. A white crystalline precipitate indicates magnesium.

A considerable amount of calcium and sulphate in the ash soluble in hydrochloric acid indicates the presence of calcium sulphate, $CaSO_4.2H_2O$ (crown filler). The presence of barium and sulphate in the acid-insoluble portion of the ash indicates barium sulphate, $BaSO_4$ (blanc fixe, or barytes). An alkaline ash containing calcium soluble in hydrochloric acid but with no sulphate present indicates the presence of calcium carbonate $CaCO_3$ (whiting or chalk). The presence of barium in ash which is soluble in hydrochloric acid with effervescence indicates barium carbonate $BaCO_3$. Considerable amounts of silica and aluminum indicate aluminum silicate added as china clay. Considerable amounts of silicate and magnesium indicate magnesium silicate derived from talc or asbestine. A microscopical examination of the ash assists in determining the variety of siliciou» minerals present.

III. Method for Quantitative Determination.

The procedure for determining the amounts of the various fillers present follows that given for the qualitative determination of them. The methods used for ensuring quantitative separation and determination of the various constituents are those described in standard textbooks dealing with mineral analysis. When the ashing of the paper causes chemical changes in the filler, the actual amount of filler originally present must be calculated. The more common examples of such changes are: loss of combined water in clay and crown filler; loss of carbon dioxide in carbonates; reduction of sulphates to sulphides.

IV. Additional Information.

Reference—Technical Methods of Analysis, by R. C. Griffin.

May Reopen Paper Mill at Huntington

[FROM OUR REGULAR CORRESPONDENT]

Huntington, Mass., November 7, 1927.—The outlook for reopening the local paper mill is brighter than ever and several of the townspeople have already pledged money for the purchase of shares in the proposed corporation. About $40,000 is needed to finish financing the running expenses and whereas the residents are eager to help with the bringing in of this new manufacturing concern they have been unable as yet to gain the necessary information to assure them that they are making wise investments in buying stock.

The committee recently appointed to investigate the project is making every possible effort to secure the needed information to answer all inquiries and is making good headway. One of the latest steps taken was to clear up the report that since the mill has been idle it has decayed greatly and would need much overhauling before starting operations. Members of the committee have made a careful examination of the property from attic to wheel pit and on the whole have found everything in a surprisingly good state with no signs whatever of decay or settling. It will, of course, be necessary to make minor repairs and within a few days the cost of this will be obtained and ready for publication.

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Paper Making Industry

Clarence J. West, Chairman

Sulphite Process

Chemical Changes in Sulphite Cellulose Boiling. O. Routala and J. Sevon. *Am. Acad. Sci. Fennicae,* 26, No. 4, 30 p (1926). Analyses of the liquor and pulp have been made at various stages of technical sulphite cellulose boils and of laboratory boils controlled so that the temperature at each stage was the same as in a technical boil. The dissolution of incrusting substances begins during the first hour of the boil and reaches an approximately constant velocity when a temperature of 80 to 100 degrees is attained. It is therefore desirable to heat to 100 degrees as rapidly as possible. Toward the end of the boil, the rate of dissolution diminishes. The sulphurous acid and calcium contents of the wood increase independently of the temperature within certain limits and the end point is always reached after the same time. Carbohydrates and lignin pass into solution together until 23.2 per cent of the wood has been dissolved; lignin then dissolves alone. The carbohydrates dissolved during the first few hours are mostly pentoses, hexoses dissolving later; the ratio of pentoses to hexoses in the hemicellulose is 1:2. It is probable that lignin and carbohydrates are combined in wood as glucose-like compounds and that the principal reactions in the sulphite boiling process are the hydrolysis of such compounds and the formation of soluble calcium ligninsulphonates. The compound of lignin with cellulose contains the constituents in the ratio 1:2.5, corresponding with 1 molecule of lignin to 5 glucose residues; the compounds of lignin with hemicelluloses contain 1 molecule of pentose and 2 molecules of hexose for each molecule of lignin. During the boiling the resin and fat are partially removed but this is mainly due to mechanical action.—C. J. W.

Sulphite Pulp

Chemistry of the Sulphite Process. IV. Changes in Composition of sulphite liquor during cooking. Erick Hägglund. Svensk Pappers Tidning. No. 24, 659-60 (1926). According to his theory of sulphite cooking the CaO content of the cooking acid should remain constant. "Loss" of CaO is largely due to dilution by condensation. Under normal cooking conditions there is no ppt. of $CaSo_4$ on the fibers in the order of magnitude reported by Miller and Swanson (cf. C. A. 17, 1328).—C. E. P.

Sulphite Cooking in Canada. Inge Nannestad. Papir-Jour. 14, No. 21, 257 (1926). A comparison of Canadian and Norwegian technic in sulphite cooking. Mention is made of recovery towers, automatic temperature and pressure recorders, automatic steam regulators, separators and screens.—C. E. P.

Researches on Pulp and Paper at Norway's Technical Institute During 1925-26. X. S. Schmidt-Nielsen. Papir-Jour. 14, No. 24, 307-10 (1926) 15, No. 1, 8-13 (1927). II "Micro-cooks" were made in sealed glass tubes using 1 gram samples of spruce sawdust, for sulphite cooks. For alkaline cooks ⅜ inch steel tubes were use. The tubes were filled with nitrogen, sealed, and held in the oil bath for periods from 1 to 30 hours. Four concentrations of acid were used at each of three temperatures (110, 125 and 140 degrees C). Although it does not seem reasonable to expect that the rate of removal of the incrustants should follow the law for a monomolecular reaction, a good set of constants are obtained for each series. When corrected for concentration of total SO_2 the different series at any one temperature are brought into agreement, with a tendency toward decreasing values. Similar cooks with NaOH using concentrations of 40, 60, 80 100 g/l at temperatures of 130°, 140° and 160° C. do not approximate the first order reaction. The calculations of Arrhenius (cf. C. A. 18, 3476) were based on too meagre data. II. A table shows the amounts of moisture taken up by different papers at various humidities and temperatures.—C. E. P.

Kinetics of Sulphite and Soda Cooking Processes. S. Schmidt-Nielsen. Papir-Journalen; Paper Trade J. 84, No. 19, 43-44 (May 12, 1927). Outline of work done by means of micro-cooks (using lg. of finely ground wood and about 5 cc. of cooking liquor) for purely theoretical studies on the reaction kinetics of the pulping processes. The wood and liquor were allowed to stand 1 to 2 days before starting cooking to insure thorough penetration; no significant effect on yield was noted when sulphite liquor was allowed to stand at ordinary temperatures a whole day in contact with sulphite liquor, but with soda liquor some action goes on in the cold, so that in this case the preliminary period has a very marked effect. The results show that, in the sulphite process, the sum total of the reactions taking place can be calculated as though the reaction were monomolecular. In the case of the soda process contrary to Arrhenius' calculations, the author finds the reaction is not monomolecular. He attributes this difference to the fact that Bruun (on whose work Arrhenius based his calculations) did not take into consideration the preliminary period, which is vital in this process, and also that he carried his cooks for only 6 to 10 hours, so that the progressive action was not sufficiently determined to describe the locus of a curve.—A. P.-C.

Multiple Duty on Drum Filters. H. A. Morrison. Paper Trade J. 84, No. 10, 49-50 (March 10, 1927). Brief discussion of the merits of vacuum drum filters for washing and concentrating stock, filtering and washing lime sludge and as a save-all.

Sulphite Pulping Process. W. Carpmael and J. G. Farbenindustrie. Eng. pat. 262,693. This is an improved process for cooking pine wood to remove the bisulphite without at the same time removing any free sulphurous acid. The free sulphurous acid, however, is removed by blowing when the cook is finished. The liquor preferably contains a mixture of calcium and magnesium bisulphites, and contains about 1.25 per cent base (as CaO) and about 5.3 per cent SO_2. Cooking is stopped as soon as titration (Sander test) shows no more bisulphites to be present.—A. P.-C.

Process for Producing Sulphite Pulp. J. B. Beveridge. Can. pats. 265,602 to 265,604 incl. Nov. 9, 1926 *No. 265,602.* Paper pulp is prepared by digesting wood with a solution comprising magnesium and sodium bisulphites and sulphurous acid. *No. 265,603.* Pulp is prepared by digesting wood chips with a solution containing calcium, magnesium and sodium bisulphites. *No. 265,604.* Pulp is prepared by preliminarily digesting wood chips with a bisulphite liquor containing a small proportion of sulphurous acid at a temperature of about 100° to 120° C., and under a pressure in excess of approximately 80 lbs. per sq. in. and thereafter digesting with a liquor containing a greater proportion of sulphurous acid at a temperature of about 130° to 150° C. and under the steam pressure corresponding to the temperature of the liquor.—A. P.-C.

Sulphite Cooking Process. E. R. Barker and F. J. Dooley. U. S. pat. 1,612,484, Dec. 29, 1926. Gas and liquor relief from one digester are introduced directly into a second filled digester at a point intermediate the top and bottom of the latter.—A. P.-C.

Process for Producing High Grade Halfstuff. H. Wenzl assigner to Farbenindustrie-Aktiengesselschaft. U. S. pat, 1,611,969

Dec. 29, 1926. Materials such as spinning-mill waste, flax, hemp straw or jute are digested by heating with an aqueous solution containing a monosulphite such as sodium sulphite together with 3 to 3.5 times as much of a bisulphite such as sodium bisulphite, and with the further addition of magnesium chloride or other neutral salt.—A. P.-C.

Sulphite Cooking Process. R. Pictet and F. Tharaldsen. Fr. pat. 616,229. The wood is cooked in a solution containing at least 100 g. SO_2 per l. and no lime. The high pressure that develops during heating allows of cooking at lower temperatures than usual and gives a better grade of pulp than with the usual cooking acid. Most of the SO_2 that remains uncombined with the incrusting matter of the wood can be recovered.—A. P.-C.

Pulping Process. H. Wenzl. Can. pat. 265,872, Nov. 16, 1927. Fibrous raw material to be used in the production of cellulose is subjected to a preliminary treatment with a mixture of alkali sulphites and bisulphites and to a subsequent treatment with chlorine, both treatments taking place in a medium of acid character.—A. P.-C.

Utilizing Relief Gas from Sulphite Digesters. G. A. Richter assignor to Brown Co. U. S. pat. 1,616,703, Feb. 8, 1927. Cool water acidulated with sulphur dioxide is passed in contact countercurrent to hot relief gas from sulphite digesters so that sulphur dioxide is liberated and condensation of steam and cooling of the sulphur dioxide in the relief gas are effected. An apparatus is described.—A. P.-C.

Heat Distribution in Sulphite Cooking. Alb. E. Nielsen. Papir-Jour. 14, 17, 203-207 (Oct., 1926). The heat input is calculated in Cal. for a 12½ ton sulphite digester, charged with 168 cubic meters wood and 115 cubic meters cooking acid, using direct steam, with a maximum temperature of 135 degrees C. and a pressure of 5½ kg/cm². The distribution of the total heat input, including useful heat, losses, and recovered heat, is shown mathematically and diagrammatically.

II. Papir-Jour. 14, 18, 216-220 (1926). Same as above for the Morterud circulation system on a 13¼ ton digester. Curves are shown comparing the direct and indirect heating systems as to temperatures, pressures, total SO_2 in liquor, degrees Be. of liquor, and duration of cooks.

III. Paper-Jour. 14, 19, 227-233 (1926). Heat calculations and diagrammatic representation of heat distribution for digester operating on indirect steam with natural circulation of cooking liquor. As a result of his calculations, Nielsen recommends a rapid rise in temperature, the use of indirect steam, recovery of the condensate, rapid circulation of cooking liquor by either natural or forced means, and relieving from one digester to another, as far as these practices are consistent with other factors.—C. E. P.

Prevention of Corrosion for Sulphite Digesters. F. G. Rawllings. U. S. pat, 1.566,118, Dec. 15, 1925. Paper Trade J. 84, No. 16, 46 (April 21, 1927). In order to prevent corrosion of steel digesters used for cooking with sodium sulphite liquors, the sodium salt of a weakly ionized acid is added to the liquor; and subsequently, during the cook, caustic soda is added at such a rate as to maintain the cooking liquor alkaline without leaving any free caustic soda in the liquor.—A. P.-C.

Waste Sulphite Liquors

Use of Sulphite Alcohol as a Motor Fuel. Anon. Papir-Jour. 14, No. 22, 284-6 (1926). Experiments using 60,000 kg. in Norway and 5,000,000 kg. in Sweden of a high proof alcohol-gasoline mixture (1:3 by weight) have shown excellent results. Greater horsepower can be developed than with gasoline alone. The consumption per horsepower per hour is lower for the alcohol gasoline mixture. The cylinders are fouled less, and no increase in oil consumption has been found. No difficulty was experienced in starting.—C. E. P.

Manufacture of New Products Comprising Lignone Derivatives. CF. Cross and A. Englestad. Eng. pat. 263,520, Sept. 21, 1925. Concentrated solutions of lignone derivatives obtained in the manufacture of wood pulp are mixed with hydrocarbons of high molecular weight or with solutions of such hydrocarbons; condensed or oxidized before such admixture; treated with chromic acid and mixed with finely-divided carbon; condensed and caused to dissolve in a mineral oxide such as ferric hydroxide; or mixed with hydrocarbons and bitumen, cotton-seed pitch, oils, or fats thereby yielding material suitable as insecticides, protective paints, or printing inks.—A. P.-C.

Utilizing Sulphite Waste Liquor. C. G. Schwalbe. U. S. pat. 1,615,102, Jan. 18, 1927. Sulphite waste liquor is mixed with an absorbent material such as carbonized wood chips or clay or kie elguhr and the mixture is heated in a closed vessel for 4 to 8 hours at a temperature of about 180 degrees C. and under a pressure not exceeding 10 atmospheres, to produce a fuel.—A. P.-C.

Process for Carbonizing Sulphite Waste Liquor. C. G. Schwalbe. Fr. pat. 591,452, Apr. 9, 1925. A mixture of 700 parts of charcoal (e.g. as obtained by carbonizing wood waste in presence of magnesium chloride solution) and 2,000 parts of concentrated sulphite waste liquor (representing about 8,000 parts of the original waste liquor), are stirred to a thick pasty mass, 2 per cent (on the weight of the organic matter of the liquor) of hydrochloric acid is added, and the mixture is heated in an autoclave at 180 degrees C. for 8 hours. The distillate obtained on relieving the pressure contains sulphurous acid and methanol. About 50 per cent of the organic matter in the liquor is recovered as charcoal which can be dried and burned directly or briquetted.—A. P.-C.

Process for the Recovery of Waste Liquor From Acid Sodium Sulphite Pulping Processes. E. L. Rinman. Fr. pat. 591,878, Apr. 18, 1925. The liquor is concentrated with preliminary, simultaneous, or subsequent separation of certain of its constituents; a suitable fuel is added and the mixture is burned under such conditions as to convert the sodium salts into sodium sulphide. The latter is leached out with sulphurous acid solution, which precipitates free sulphur and forms sodium sulphite or bisulphite. The free sulphur is separated from the solution, which is fortified with further sulphur dioxide, if necessary, and used again as cooking liquor. Sodium sulphate can be added to the liquor either before or after combustion. The combustion gases are utilized under a waste heat boiler and also for completing the concentration of the waste liquor. The waste liquor can be treated with one or more resin solvents either before or after elimination of free sulphur dioxide by means of a current of air.—A. P.-C.

Sulphite Waste Liquor. Max Hoenig and Walter Fuchs. Ber. 60B, 782-6 (1927). Waste sulphite liquors contain considerable loosely combined sulphur dioxide which is liberated by alkali and should be recoverable. Analysis of a raw liquor and one which has been fermented and distilled showed that the loosely combined sulphur dioxide is not held by sugars or volatile aldehydes. Data point to a stoichiometric relation between loosely and firmly combined sulphur dioxide. The facts are best explained by considering that the lignin complex containing tautomeric phenolic hydroxyl groups, which can account for both loosely combined sulphur dioxide and stable sulphonic acids. By careful dialysis through a parchment membrane a ligninsulphonic acid was prepared equal to about 35 per cent of the organic material in the raw liquor, with a copper number of less than 2 and a ratio of loosely combined to fixed sulphur dioxide of 1:1.—C. J. W.

Beating

Some Determinations on Beaten and Unbeaten Pulps. G. Porrvick. Svensk Pappers-Tid 30, No. 1, 12-16 (1917. A discussion of the effect of beating upon such properties of the paper as apparent specific gravity, capillarity, and breaking length.—C. E. P.

Fiber Formation in Paper Making. G. Porrvick. Svensk Pappers-Tid. 30, No. 2, 40-44 (1927). Through overbleaching of

pulp or cellulose, oxycelluloses are formed, which the converted into dextrin-like materials during beating. The fibers themselves are somewhat weakened by overbleaching, but not in sufficient degree to account for all of the loss in strength in the paper. The formation properties of the fibers have been injured through swelling and cutting, without the necessary brushing out into fibrillae. The resistance of a fiber to the injurious beater effect (cutting to extremely short lengths without brushing out) is dependent upon its previous chemical treatment. The mechanical felting of the fibers is a greater factor in the production of strength in the finished paper than either hydration or the actual strength of the fibers themselves.—C.E.P.

Stundy of the Beater. Samuel Milne. World's Paper Tr. Rev. 87, 1170-1176 (Apr. 15), 1258, 1260 (Apr. 22, 1927); Paper Tr. J. 84 No. 24, 54, 57, (June 16, 1927). A discussion of the beating process, covering wet beating, circulation, fibrages, roll bars, bedplate bars, angle of bars, weight of roll, edges of bars, temperature and mixing, and showing how the Milne beater has been designed so as to obtain maximum beating efficiency.—A.P.-C.

Rod Mill for Treating Pulp. H. C. Holthoff assingor to Allis-Chalmers Manufacturing Co. U. S. pat. 1,607,828, Nov. 23, 1926. The machine consists of a horizontal, hollow, rotating drum, in which are metal rods coated with rubber or other resilient material to prevent corrosion and discoloration, the rods tumbling or rolling freely during rotation of the drum.—A.P.-C.

Beater. S. Milne. Eng. pat. 261,301. The roll is provided with a curved breast plate or shield extending in front of the roll to a point relatively near the bedplate so as to keep the pulp back from the roll thereby reducing the power required to drive the roll. The bed of the trough is dished just in front of the bedplate so as to allow of the unhindered flow of pulp to the roll and bedplate. A deflector comprising one or more angle strips is secured to the cover beyond the backfall. The invention may be applied to the beating engine described in Eng. pat. 252,626.—A.P.-C.

Renewable-Crown Beater Bedplate. C. R. Kranz assignor to American Manganese Steel Co., P. S. pat. 1,600,986, Sept. 28, 1926. The bedplate is constructed in two portions, a body portion adapted to be supported in the beater in the usual way or in any other suitable way, and a crown or top portion which is supported by and interlocked with the body portion in such a manner as to hold it against displacement in any direction. The top or crown portion embodies the knives, thus economizing the cost of maintenance of the bed and rendering it economically practicable to produce the working part of the bed of more durable material such as manganese steel, while the main or body portion can be made of cheaper metal. Various means are illustrated in the specifications for preventing vertical and longitudinal displacement of the crown relatively to the body of the bedplate.—A.P.-C.

Determinations on Strength and Degree of Beating of Pulps. G. Porrvick. Svensk Pappers-Tid. No. 23, 630-3 (1926). Dried pulp must be broken up and soaked for at least one day before beating. The pulps were beaten in an ordinary ball mill and in a specially constructed mill having a stationary vertical plate with straight grinding edges and a rotary plate with curved blades. The pressure between the two plates was regulated by means of a side-arm lever and weights. As a rule this mill developed higher strengths than the ball mill. The time that elapses between the beating and the formation of the paper is important in that the strength continues to increase for a time and then falls off again. With increased beating some of the fine fibers pass through the screen (No. 60) and the strength of the sheet is thus affected. With protracted beating as much as 26 per cent of the weight of pulp was lost. Porrvick recommends the use of 1 cm. strips instead of 18 cm. in making the tensile test in order to minimize errors due to faulty formation of the sheet. Svensk Pappers-Tid. No. 24, 660-1 (1926). Paper which just responds to the "blister test" is defined as having reached the "pergamin" (greaseproof) stage of beating. This point can be designated as a basis for comparing the beating requirements of pulps. The "hardness" of a pulp, as regards its beater treatment, can be determined by noting the time required to beat it to a certain point (40 per cent Schopper-Riegler).—C. E. P.

Bleaching

Relation of Bleach Concentration to Specific Gravity. M. N. Roberts. Pulp & Paper 25, 610-611 (May 12, 1927). A table is given of specific gravity, Baumé degrees, active chlorine and standard bleaching powder (35 per cent available chlorine) in bleach solutions, from 0 to 28.72 grams available chlorine per liter. It was found that concentration of the bleach varies but slightly if any milkiness is present, as also does the specific gravity, these readings being affected only when the solution is exceedingly milky.—A.P.-C.

Preparation of Bleaching Liquor. J. H. MacMahon assignor to Mathieson Alkali Works (Inc.) U. S. pats. 1,609,755 to 1,609,758, inclusive, Dec. 7, 1926.—*No. 1,609,755.* The solution to be chlorinated is circulated by means of a pump, and the chlorine, the major portion of which is in the liquid state, is introduced directly into the stream circulating through the pump in such a manner as to cause intimate admixture of the chlorine and the solution within the pump. *No. 1,609,756.* In a chlorine-evaporating apparatus the liquid chlorine tank is connected through a reducing or expansion valve to a worm around which water at atmospheric temperature is circulated to raise the temperature of the chlorine to approximately that of the atmosphere. *No. 1,609,757.* Provides an apparatus for carrying out the processes covered by 1,609,755. *No. 1,609,758.* Liquid chlorine is withdrawn from a supply of liquid chlorine under pressure, the pressure of the withdrawn portion is reduced, and the chlorine is introduced directly into an alkali solution which is vigorously agitated to effect substantially complete vaporization of the chlorine.—A.P.-C.

Clarification of Bleach Liquors. J. D. MacMahon assignor to Mathieson Alkali Works (Inc.) U. S. pat. 1,609,759, Dec. 7, 1926. Calcium hypochlorite bleach liquor containing suspended particles, including lime, is separated from coarse suspended matter and chlorinated until the remaining suspended lime dissolves without carrying the chlorination beyond neutrality.—A.P.-C.

Process and Apparatus for Bleaching Pulp. C. B. Thorne. Eng. pat. 264,596, Oct. 21, 1925. Pulp at a high density is treated uniformly with a bleaching agent and water in a mixer, and then, while still comparatively stiff, is conveyed continuously downwards through a series of aerating towers, through which air or gas is passed from a slowly-rotating hollow shaft carrying a perforated distributing arm, agitation of the pulp being avoided as much as possible. Removal from each tower is facilitated by the use of a jet of water, the material being again concentrated before entering the next tower. Bleaching of highly concentrated pulp may be combined with the treatment of diluted material.—A.P.-C.

Bleaching of Wood Pulp. V. Effect of Consistence as Influenced by the Bleach Ratio. C. E. Curran and P. K. Baird. Paper Trade J. 84, No. 15, 45-47 (Apr. 14, 1927). A study of the effect of consistence on the bleaching of sulphite pulp under limited conditions showed that increase of consistence does not affect the final color if the bleach ratio (ratio of standard 35 per cent bleaching powder to oven dry pulp) used is just sufficient to produce a low or average degree of bleaching; but when a high bleach ratio is used to give a high white, there is a definite gain in the final color by the use of high consistence. The results were obtained with consistencies of 1 to 7 per cent, and do not permit generalization regarding the possible continuation of improvement in color with high (10 to 20 per cent) consistence when high bleach ratios are used. High consistence bleaching may lead to the formation of oxycellulose and weakening of the fiber, chemical analyses having generally shown that pulps bleached at 7 per cent consistence have a slightly lower alpha cellulose content than those bleached at 3 per cent consistence.—A.P.-C.

Section of the

COST ASSOCIATION OF THE PAPER INDUSTRY

Affiliated with

THE AMERICAN PAPER AND PULP ASSOCIATION

Conducted by THOS. J. BURKE, C.A., Sec-Treas

The Distribution of Expense to Manufacturing or Production Centers*

By Roy M. Springer, Bird & Son, Inc.

Mr. Chairman, Members, and Guests of the Cost Association of the Paper Industry: Mr. Burke has asked me to talk on a subject which is of vital importance to all manufacturers and especially important in the paper industry where manufacturing expense or burden represents between twenty-five and fifty per cent of the total manufacturing cost.

It has only been during recent years that manufacturing expense has received special attention and there are still many mills which distribute their manufacturing expense in a very hit-or-miss manner. The old alibi that our business is different from every other business is true to a certain extent, but there are some general principles and methods which apply to all manufacturers and there are many others applying to all manufacturers making the same line of product.

Bird & Son, Inc., are primarily paper makers, but in finding outlets for paper they have become converters of paper into other products. Consequently our accounting contains features widely removed from the manufacture of paper. However, I will confine what I have to say to the business of paper making and try not to make it too Bird & Son or burdensome.

It would be useless for me to waste time with a long explanation of the nature and origin of manufacturing expense as every person here knows that a good broad definition of manufacturing expense is "All cost factors except direct labor and direct materials." Viewing it from this angle, expense immediately takes on a proportion which warrants considerable attention. When we consider still farther the wide variety of expense factors, together with the difficulties connected with their distribution and control, we realize that this phase of costs may justly demand considerable attention and thought from the cost accountant.

Indications point to an increase in the ratio of expense to the other two cost elements as machinery is continually replacing direct labor. To present a complete picture of the distribution and control of manufacturing expense the subject may be divided into three main divisions such as "Distribution, Accounting Control and Profitable use of records."

Distribution

Before considering how the manufacturing expenses are to be distributed, it should be determined to what practical use we are to put these records and then make studies and plans to produce the desired information with the least possible effort. The cost accountant may have rather pronounced ideas regarding the best methods of lining up his records but he must also be able to sense the attitude and desires of the executives and foremen who are to use the information for other than accounting purposes. This phase of the situation is too often overlooked, resulting in a lack of interest from the very people who are in a position to use the records and reports to keep down expenses, thereby assisting in attaining the goal of net profits.

There are several different methods of distributing manufacturing expenses ranging from a per cent of direct labor to an hourly machine rate. No one method will adequately cover all situations. For raw material handling we may use a flat rate per ton for all materials or a different rate per ton which would compensate for the variation in handling costs for different kinds of materials. In many manufacturing processes an hourly machine rate may provide the most satisfactory results. In a finishing department we may apply the expense on a cost per cwt. or a percentage of direct labor. Obviously the method which best fills the requirements is the one to be used.

To assist in the accumulation and distribution of expenses for accounting purposes the mill should be divided into different departments. The department to be set-up will be determined based on a thorough study of the plant and manufacturing processes. In some cases an individual machine would constitute a department, but several like machines in a group may be set up as one department. Quite frequently changes are made in the departmental line-up to reflect changing conditions or to more accurately distribute expense to the product. A few years ago one department covered all beaters and Jordans but after studies were made the beaters and Jordans were separated and later the groups of beaters and Jordans were split up into several departments. This refinement in distributing expenses showed that additional clerical work was fully justified as certain papers showed quite a change in expense per ton when compared with the old method.

After the proper departments have been determined it then becomes necessary to decide to what extent the expense chargeable to the different departments will be classified. Accurate costs may be figured if the different kinds of expense chargeable to a department are thrown into one pot resulting in one total figure for expense. This would be far from satisfactory in an efficient up-to-date mill as those in charge are entitled to receive a sufficient amount of detail to show the component parts making up the total expenses. No aggressive superintendent would be satisfied

* Address given before Cost Association of the Paper Industry, at Statler Hotel, Detroit, Mich., October 21, 1927.

with merely knowing that all materials used cost a certain amount. He would want to know how much of each material was used for the period and he would also wish to know how the amount of each material used compared with standard. Exactly the same reasoning applies to expenses and here again the cost accountant must allow the desires and opinions of the men who will use records for expense control purposes to guide him.

There are various systems used for classifying or symbolizing cost factors. One very practical way is to symbolize all direct materials as 1—1 and all direct labor as 2—1. Expenses may be divided into two main divisions such as direct or operating expenses and fixed or constant expenses. The figure three would be the key figure for direct expenses such as 3—3 for Repairs to Machinery and the figure 4 would indicate fixed or constant expenses such as 4—3 Insurance.

Incidental to our diversification of manufacture we have in our plants nearly fifty different expense classifications. Some apply to all departments and others apply to only one or two departments. We speak of these classifications, as "Divisions of Charge." Many of them would not interest this group so I will use a theoretical group, giving a brief explanation for each division of charge, which we have found to be pertinent to the manufacture of paper.

3—Group Direct or Operating Expenses

3—1 Indirect Labor

Indirect labor is usually understood to be labor which is not working directly upon the product but the labor in certain non-productive or service departments such as engineers in the power department or machinists in the maintenance department is considered direct labor for these departments. In some instances it is of value to keep a supplementary detail showing the different classifications of indirect labor to provide information to assist in controlling and reducing if possible, the cost of this class of labor which, in many cases, may be waste labor.

3—2 Inspection

In some departments inspection might be included under indirect labor or supervision but in other departments the function of inspection is of sufficient importance to make it advisable to show it separately. Inspectors are responsible for the detection of imperfections in the product but they do not cover the inspection of buildings or equipment.

3—3 Repairs

What shall be termed as repairs may form the basis for much discussion and difference of opinion. I know that in our mill we do not consider as repairs certain jobs which others may call repairs. We interpret repairs as the cost of keeping buildings, machinery, and equipment in good working condition. A sizable repair, which should not be duplicated for several years, may be capitalized and written off.

Repairs are the result of breakage, wear and tear, and action of the elements.

3—4 Miscellaneous Supplies

Trimmer hooks, beaters, rakes and paddles, brooms, towels, soap and similar items are called miscellaneous supplies. Some may feel that it is unnecessary to show this class of expense separately and would charge it to general expense. Last year we made a drive on this class of expense which resulted in very satisfactory reductions. Detail of all supplies used was furnished to each foreman and the appearance of the men would never indicate that they were using in the mill the quantity of soap shown by this detail. A comparison of these details from month to month showed marked decrease. After it was felt that these comparisons had answered their purpose, the monthly details in some cases were discontinued but checks are being made periodically to prevent the charges from again becoming excessive. This suggests the thought that we must keep our records alive and not carry along a lot of deadwood. Records are alive only when they furnish result producing information.

3—5 Miscellaneous Expense

Any miscellaneous work which is not covered by the other divisions of charge, is charged to this item.

3—6 Material Handling

There is chance for a wide range in the application of this expense or cost. In a paper mill handling represents such a large part of the cost that it may be necessary to carry a separate department for handling and storing raw materials and another department for the finished product. In this case handling charges for these departments may be charged direct to costs as a separate item.

There are other departments where handling may be done by men in the department or the cost of a regular transfer department may be split over several departments. This class of work would appear under each department as 3—6.

3—7 Belts

This division of charge was inaugurated several years ago when steam engines and line shafts furnished most of driving power. Belt upkeep is continually becoming less of a factor as, in many cases, direct motor drives are fast replacing the steam engine and line shaft. All repairs and small replacements are charged to this expense. In many cases driving efficiency is increased and belt costs are reduced by the use of certain attachments such as the Pulmax drive.

3—8 Safety Appliances

During the last few years considerable money has been spent in properly guarding machines. The employers liability laws and a sincere interest in the protection of workers from injury have been responsible for these steps. Safety appliances is charged with the cost of any guards or attachments which are not a part of the original equipment. A few days ago our personnel department wished to know the total cost of safety appliances by plants for the year 1926.

Our standing of second in Class B with a rating of 1.2 in the paper mill safety contest for the first six months of 1927 is a practical demonstration of the value of safety appliances.

3—9 Electric Current

If all current was purchased and metered to every department it would be very simple to distribute this cost, but I judge that many mills generate as well as purchase current, and I doubt if the actual current used is metered to every department. This, of course, complicates the situation, making it necessary to figure the cost of current generated before any distribution can be made. The cost of current generated is added to the amount purchased and an average cost per k.w.h. is found. The total cost may be distributed in two different ways. Certain departments may use sufficient current to make it advisable to actually meter the amount used which is extended at the average cost per k.w.h. The balance of the current may be prorated to the remaining departments by extending the productive hours for each unit by the rated k.w. per hour. This, of course, does not allow for running at less than rated load but it is doubtful if it would pay to try and give effect to these variables. Electric power may represent fifteen or twenty per cent of the total expenses and its cost and possibilities of reduction warrant considerable attention.

3—10 Steam Power and Heat

Electric drives are gradually removing steam from the field of direct driving power for machines but steam for heating stuff and dryer rolls is one of the largest, if not the largest, single item of expense in a paper mill. Much thought is being given toward reducing the cost of steam through such items as oil-fired boilers, automatic stokers, pulverized coal and centralized power plants. About two years ago we shut down the power plant in one of our mills and have been supplying that mill, through an eight inch steam line, with steam generated in our main power plant three-

quarters of a mile distant. This has resulted in a material reduction in the cost of steam used.

The total monthly cost of steam used represents direct labor, coal burned and estimated expense. By using estimated expense we save several days in distributing power and steam costs. Any difference between the estimate used and the actual expense is picked up in the following month's estimate. The amount of coal used is increased by a certain percentage to cover shrinkage and our records are adjusted to the physical inventory about twice a year when the coal in the pocket is at a low point. There are various meters and instruments which will measure with a certain amount of accuracy the production and use of steam and the amount used by some departments is enough to warrant the use of such instruments. There are many departments where the amount used is estimated by multiplying the standard amount consumed per hour by the productive hours.

3—11 Oiling and Cleaning

Some departments do their own oiling and cleaning and of course the labor and supplies are charged direct. In some mills this service may reach such proportions that a separate department would do this work, in which case the total labor and expense of the oiling and cleaning department would be prorated to the departments served on a standard percentage based on a study of the time devoted to each department. At best it is difficult to keep a paper mill clean and orderly but money spent for this purpose is productive of good dividends in the increased morale and goodwill of the workers.

3—12 Felts

On a paper machine felts present considerable expense and a record should be kept either in the cost department or the mill's superintendent's office which would show when each felt was placed on the machine. If felts on a certain machine were not giving normal or satisfactory service this record would call it to the mill superintendent's attention.

3—13 Wires

What has been said about felts would apply to wires.

4—Group-Fixed or Constant Expenses

4—1 Watchmen and Fire Department

Most mills have watchmen but only those mills which are located in districts which are not adequately protected by a municipal fire department find it necessary to maintain a fire department of their own. All labor and expense charges for this service are accumulated as a separate department and then applied to the various departments on a floor area basis.

4—2 Taxes

Total personal and real estate taxes are distributed to main buildings or divisions on assessed value. Taxes applying to a building are distributed to departments on the basis of floor area occupied and the taxes on machinery and equipment are prorated on cost value.

4—3 Insurance

There are several kinds of insurance such as steam boiler, fly wheel, use and occupancy, fire and employers liability, but the last two mentioned are by far the most important. Those of us who attended the meeting at Holyoke, Mass., in September, 1926, were privileged to listen to a most enlightening and instructive talk and discussion on insurance by Mr. Reed B. Timmers, of Albany, N. Y.

Replacement value, less a certain co-insurance percentage, is the basis for paying and distributing fire insurance premiums. Much can be done toward reducing insurance costs and still be adequately covered and perhaps an actual case of reduction would be of interest.

Some operate on the policy of carrying insurance upon maximum inventories and when inventories are low they are paying premiums on coverage which could not be collected in case of fire. The first of each month a report is furnished to the person who is responsible for adequate insurance. This report shows actual inventory value and an estimate of inventory value for the first of the following month is given. When the coverage which is being carried appears to be out of line with inventories a revision is made and the small additional clerical work involved in preparing these inventory reports is paying big dividends as we are saving several hundred dollars per year since this plan was placed in operation.

Employers Liability Insurance is deserving of considerable attention. Substantial savings can be made in mills which have not closely followed this expenditure. Much can be done by making sure that the labor is carried under the lowest classification which in some cases may represent from 1 to 3 per cent of labor. Premiums on this insurance are charged to departments on the same direct labor basis on which they are assessed. Aside from the humane aspect it pays to follow up injuries as a mill's "experience" is very instrumental in fixing the rates.

4—4 Depreciation

One should never mention this word in the presence of a group of accountants unless he wishes to uncork some well charged arguments as to what depreciation is and how it should be handled. There are several approved methods of charging the cost of production with the amount of "plant" consumed by production. The method to be used is largely a matter of personal opinion. We use the "straight line" method as it is perhaps the most simple and workable.

4—5 Repairs to Buildings

Buildings repairs constitute the upkeep of the shell, floors, elevators, washrooms and any other appurtenances which are a part of the building and would be maintained by the owner if the building was hired. When a building contains only one department that department stands the total building charges. If a building contains more than one department the building upkeep charges are distributed on the floor area occupied by each department with a few exceptions. To illustrate, if the activities of one department require renewal of the flooring more frequently than the balance of the building that department may be charged direct with its new floor.

4—6 Electric Service Charge

This represents the constant or fixed expenses incidental to maintaining sufficient equipment to furnish the required amount of current at all times. Service charge is distributed to departments on the basis of current used over a representative period.

4—7 Steam Service Charge

This is handled in the same manner as electric service charge.

4—8 General Stores Expense

The cost of maintaining and operating the general stores department is distributed to other departments on the basis of stores issued for the previous year.

4—9 Supervision

The finest plant may be furnished, the best materials procured and the highest grade labor hired, but the best product cannot be produced unless these three elements are properly supervised. The salaries of men who are responsible, either directly or indirectly, for producing the largest amount of quality product with the use of the least equipment, material and direct labor—the men who put the "prod" in production—are charged to supervision.

In most cases these salaries are distributed on a direct labor basis starting with the manufacturing manager whose salary is spread over all divisions down to a foreman who has charge of two or more departments. There may be certain exceptions to this direct labor basis and an arbitrary split furnished by the individual would be more accurate.

4—10 Accounting and Office

The total cost of operating the cost department, purchasing de-

partment and manufacturing office is distributed to manufacturing departments on a direct labor basis. If there are offices scattered through the mill their cost is applied direct to the departments served.

4—11 Laboratory

The laboratory occupies a very important place today and one of its important functions is furnishing industry with material checks and tests which will insure the desired quality. Another function of equal, if not more important, is the development of combinations or formulas which will reduce costs without impairing quality. I know of one laboratory development which made it possible to substitute a cheaper material which did not lower the quality of the finished product but resulted in a saving of several thousand dollars per year.

Every month the person in charge of each laboratory furnishes the cost department with an arbitrary distribution of the entire laboratory labor and expense. This distribution is based on his best estimate of the service rendered to each department.

4—12 General

There are certain expenses which are of such a general nature that it would be impractical, if not impossible, to accurately distribute them direct to each department. It is important to keep general charges at the lowest possible figure as their basis of distribution is bound to be more or less arbitrary. A sheet similar to any departmental sheet may be carried on which to classify and accumulate all general charges.

Previous to July of this year, we distributed total general charges on a direct labor basis to the departments affected and felt that we were fairly accurate. Last spring we had occasion to analyze the increasing expenses of a finishing department and found that this department, through having a large percentage of direct labor in relation to expense, was receiving a very sizable "general" charge. After doing this we decided that direct labor was not a fair basis for this particular proration. Since then we have revised our basis of prorating general taking into consideration floor area, plant value, and direct labor. The expense on the finishing department in question changed from the original figure of 23.4 per cent to 15.3 per cent. If any of you gentlemen would be interested to go into the detail of this new proration, I have a schedule with me which I think would show clearly how it was done.

Accumulation

All labor and expense charges to a department are posted to an accumulation sheet under the different divisions of charge. This sheet covers three months and the total of these sheets must balance with the control account under which they are carried. The expenses of each department are charged to a manufacturing expense control account which may include one or several departments. In a small mill one control account may answer every requirement but in a large mill it may be advisable to carry a separate control for different groups of activities.

Each month the total expenses accumulated under each control account must be closed out but their ultimate disposition will depend upon the general accounting structure.

One method is to charge the current month's costs with the total expense for the month. The disadvantages of this method are the delay in figuring actual costs as costs cannot be figured until total expense is accumulated and there may be a wide variation in the costs from month to month as an increase or decrease in expenses or the volume of production has a direct bearing upon the actual costs.

Another method is to charge a standard amount of expense into costs and adjust any balance of actual expense remaining by charging production through the use of a supplementary rate. In addition to the disadvantages of the former method this plan involves more clerical work to produce the same result.

We have found that satisfactory results can be obtained by charging production with expense figured by multiplying productive time by the standard rate per hour which absorbs the major portion of actual expenses. If the unit has operated above or below normal capacity Idle Time is charged or credited with an amount of expense found by extending the idle time rate by the under or over normal hours. You will remember that the expenses are divided into two main groups. The Idle Time rate is determined by dividing the fixed or constant expenses for a representative period by the normal hours for the same period. Any balance of actual expense left after absorbed expense and idle expense have been figured is carried direct to Profit and Loss under an Unabsorbed or Overapplied Manufacturing Expense account.

In connection with the report which disposes of the entire manufacturing expense we carry an accumulative record showing the amount of idle time and unabsorbed or overapplied expense to date for each department. This furnishes a guide as to the accuracy of our normal operating time and the degree of correctness with which we are estimating our rates. Normals are revised if necessary twice a year and expense rates may be changed oftener if advisable. In most instances six months' expenses and normal hours are used in arriving at the productive rate per hour.

Profitable Use of Records

Some cost accountants may feel that their part of the job is complete when expenses are accumulated, distributed and controlled with a satisfactory degree of accuracy. This may be true from a strictly accounting viewpoint but I wonder how many of us tie ourselves up with the accounting side of cost keeping and overlook the influential force a properly directed cost department may be in assisting management in cost reduction and control. The cost department rightly has been called "The Compass of Management." I have gone over in detail a practical way of handling expenses but this, by no means, is the only way in which they may be handled correctly. For example it doesn't make any vital difference whether inspection is shown separately or shown under indirect labor as long as we are consistent for purposes of comparison. It is of infinitely more importance to put the proper "kick" into our records to insure their profitable use.

In closing I am going to relate our own experience to illustrate this point. For several years the Cost Department has furnished the mill with monthly detailed reports of expenses by departments and costs by products. These reports were given a certain amount of attention by the superintendents and foremen but they didn't seem to be used to the fullest advantage as production is usually the chief aim of a manufacturing man. A member of the cost department was selected to act as the point of contact between the cost department and the mill. His job was to explain if necessary the way reports were compiled, analyze any unfavorable conditions and prepare special studies and reports. His aim was to make figures forcibly talk the mill language in such a way that they must be used.

The first few months his efforts met with luke-warm response from the mill. Gradually the men in the mill began to realize the extent to which these figures could be used to assist them in controlling expense and reducing costs. Now they are asking all kinds of questions regarding costs and are following costs and expenses so closely that an explanation is requested, with the view of taking corrective action, when anything looks out of line.

Kelso Paper Co. Buys Site

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., November 4, 1927.—The Kelso Paper Company, Kelso, Wash., which was recently organized for active business, has now purchased two pieces of property, to be developed for the site of the proposed plant. One of these is that of the former Kelso Shingle Mill and the other a site near the city pumping plant owned by the Puget Sound Light and Power Company. Earl Knight of Kelso, who is treasurer of the company, states that they will start in a modest way with a small modern mill.

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Paper Makers Importing Co., Easton, Pa., St. Austell, Cornwall, Eng.
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CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Baltimore, Md.—The Maryland Paper Mills, Inc., Baltimore, care of Robert A. Wilson, 5 Hopkins Place, Baltimore, recently organized by Mr. Wilson and a number of associates, with capital of $1,000,000, is said to have concluded negotiations for the purchase of a tract of about 35 acres of land at Glenburnie, near Baltimore, as a site for a proposed new mill. Preliminary plans are under way for the initial unit, to be one-story, 50 x 200 ft., reported to cost more than $100,000, with machinery; the structure will be equipped for the production of paper bags and containers, and work on erection is scheduled to begin before the close of the year. At a later date the company will build other units, to include a complete paper-manufacturing plant. The entire project is estimated to cost more than $500,000. The new company is arranging a preferred stock issue to total close to $1,000,000, to provide funds for the work. William W. Ormsbee will be president and general manager of the new company. Frank S. Revell, Glenburnie, and Robert D. Burbank, 1103 Vermont Avenue, N. W., are also interested in the organization.

Green Bay, Wis.—The Fort Edward Paper Company, South State street, will proceed at once with its proposed new boiler house addition, for which a number of miscellaneous contracts have been let. It will be two-story, 53 x 58 ft.

South Bend, Ind.—The Empire Box Company, 518 West Monroe street, Chicago, manufacturers of paper and corrugated boxes, containers, etc., has completed plans and will take bids at once on general contract for the construction of a new plant at South Bend, to be one-story, reported to cost in excess of $90,000, with equipment. W. Ellwood, Christman Building, South Bend, is architect. S. Kline is one of the heads of the company, in charge.

Sacramento, Cal.—The Sacramento Pulp and Paper Company, temporary office 404 Bryte Building, recently organized with a capital of $1,000,000, is said to have negotiations under way for the purchase of a tract of land near Sacramento, for the construction of a new pulp and paper mill. The plant will operate under a special process, using grape vine cuttings as source of raw material. The initial mill will consist of a number of units with power house, machine shop, and auxiliary buildings, reported to cost more than $500,000, including equipment. It is proposed to break ground in about 30 days. The new company is headed by H. D. Wagnon, J. Garnett Smith, and R. M. Conley.

Baltimore, Md.—L. Gordon & Son, Inc., 207 Fallsway, manufacturer of paper boxes and containers, is reported to be planning the early rebuilding of the portion of its plant recently destroyed by fire. An official estimate of loss has not been announced.

Attleboro, Mass.—The American Reinforced Paper Company, County street, has awarded a general building contract to C. K. Rathbone, 112 Medway street, Providence, R. I., for the construction of its proposed new plant addition on Starkey Avenue. It will be one-story, 60 x 175 feet, brick and reinforced-concrete, reported to cost more than $60,000, with equipment.

New York, N. Y.—The Silverberg Paper Box Company, Inc., recently formed with a capital of $10,000, is said to be perfecting plans for the operation of a local plant for the manufacturer of paper boxes and containers. The company is represented by Jerome Oltarsh of Oltarsh & Snyder, 158 Rivington street, New York.

Waterford, Conn.—The Quaker Hill Paper Company has completed plans and will proceed with the construction of a new one-story addition to its plant to be used primarily for storage and distributing service. The estimated cost has not been announced. A general building contract has been let to the H. Wales Lines Company, New London, Conn.

Laurel, Miss.—The Mason Fibre Company, South Fourth avenue, is reported to be planning enlargement of its plant to provide for considerable increase in present output. Estimated cost has been announced. It is understood that the project is in a preliminary stage. William F. Mason is head.

Cleveland, Ohio.—The Standard Envelope Manufacturing Company, 1600 East Thirtieth street, manufacturer of paper goods, is said to be arranging an immediate call for bids for a proposed new addition to its plant, to be one-story 80 x 110 ft., reported to cost close to $50,000, including improvements in present factory. Christian, Schwarzenberg & Gaede, 1900 Euclid Building, are architects and engineers.

Pittsburgh, Pa.—The Fuller Label and Box Company, 444-8 Dargan street, sustained a fire loss at its paper box-manufacturing plant on Oct. 26, with loss reported at close to $11,000, including building and stock. It is understood that the damage will be replaced.

Boston, Mass.—The Robins Paper Company, recently organized with capital of $25,000, is said to be arranging the establishment of a local wholesale and distributing business, and will carry an extensive stock. The company is headed by Gilbert T. Singleton, president; and Herbert W. Robins, 412 Front street, Weymouth, treasurer and representative.

Buffalo, N. Y.—The Buffalo Waste Paper Company, 102 Lower Terrace, had a small fire loss on October 26. An official estimate of the amount has not been announced.

Kapuskasing, Ont.—The Spruce Falls Power and Paper Company is arranging to proceed at once with its proposed local pulp and paper mill, for which general contract recently was let to Morrow & Beatey, Peterboro, Ont. The project will include a power plant for service at the mill. The entire cost is reported in excess of $4,000,000, with machinery. J. H. Black is general manager.

Toronto, Ont.—The Dominion Box Boards, Ltd., operated by the Dominion Envelopes and Cartons, Ltd., Duchess Street, Toronto, has awarded a general contract to the Toms Contracting Company, 245 St. Claim avenue, East, Toronto, for the erection of its proposed new mill unit on Cherry street. It will consist of a group of one-story buildings including machine room, beater department, and power house, to cost more than $750,000, with

(Continued on page 76)

Maintains your high standards -yet reduces your costs

ALPHA

FIBRE

for the making of fine paper

Alpha takes the place of many grades of rags in paper making. It is clean, more economical and can be used without sacrifice of quality.

Also, papers hitherto made without rag stock, can be brought to the high quality goal, by adding Alpha to the furnish in suitable proportions.

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founded 1852

PORTLAND, MAINE

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American Writing Paper Co. 6s, 1939	@ 79
Abitibi Power & Paper Co. 6s, 1931	@101
Continental Paper & Bag Mills 6½s, 1944	@ 80
Champion Fibre Co. 6s, 1941	@100
Donnacona Paper Co. Common	@ 70
Eastern Manufacturing Co. 7s, 1938	@ 91
Fort William Paper Co. 6s, 1946	@ 98¼
Missisquoi Pulp & Paper Co. 7s, 1929	@ 99¼
Port Alfred Pulp & Paper Co.	@ 75
Parker Young Co. 6½s, 1944	@ 98
St. Regis Paper Co. Preferred	@102
St. Croix Paper Co. Common	@150
Whitaker Paper Co. 7s, 1942	@107

WE WILL SELL

Donnacona Paper Co. 6s, 1940	@103½
Fort Orange Paper Co. 7s, 1942	@103
Great Northern Paper Co.	@ 71
Jessup & Moore Paper Co. Common	@ 15
Jessup & Moore Paper Co. Pfd.	@ 50
St. Anne Paper Co. 6½s, 1946	@102

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Our SPECIAL PAPER brand for beater-sizing increases strength of sheet and gives improved finish.

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Corn Products Refining Company

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Starch

Imports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING NOVEMBER 5, 1927

SUMMARY

Cigarette paper	54 cs.
Wall paper	103 bls., 6 cs.
Paper hangings	30 bls., 5 cs.
Hanging paper	3 cs.
Printing paper	2 cs.
News print	481 rolls, 147 bls.
Printing paper	47 cs.
Wrapping paper	241 rolls, 16 bls., 83 cs.
Packing paper	108 rolls, 17 cs.
Stencil paper	42 cs.
Pergamyn paper	74 cs.
Writing paper	27 cs.
Letter paper	5 cs.
Cover paper	7 cs.
Parchment paper	9 bls., 2 cs.
Trunk paper	3 cs.
Colored paper	22 cs.
Filter paper	1 cs.
Drawing paper	2 cs.
Design paper	1 cs.
Photo paper	7 cs.
Transfer paper	15 cs.
Decalcomania paper	43 cs.
Gold coated paper	155 cs.
Muslin paper	9 cs.
Tissue paper	3 cs.
Paper tubes	9 cs.
Straw board	963 rolls
Miscellaneous paper	1,549 rolls, 136 bls., 128 cs.

CIGARETTE PAPER

De Manduit Paper Corp., Indep. Hall, Havre, 54 cs.

WALL PAPER

Bendix Paper Co., A. Ballin, Hamburg, 1 cs.
Globe Shipping Co., A. Ballin, Hamburg, 8 bls., 3 cs.
R. F. Downing & Co., A. Ballin, Hamburg, 1 ble.
J. E. Bernard & Co., Pennland, Antwerp, 10 bls.
F. J. Emmerich, Tuscania, London, 6 bls.
A. C. Dodman, Jr., Inc., Majestic, Southampton, 12 bls., 2 cs.
A. C. Dodman, Jr., Inc., Andania, Liverpool, 64 bls.
W. H. S. Lloyd & Co., Andania, Liverpool, 2 bls.

PAPER HANGINGS

W. H. S. Lloyd & Co., Minnetonka, London, 9 bls., 3 cs.
A. C. Dodman, Jr., Inc., Celtic, Liverpool, 21 bls.
Whiting & Patterson, Inc., Majestic, Southampton, 2 cs.

HANGING PAPER

A. L. Diament & Co., De Grasse, Havre, 3 cs.

PAINTING PAPER

W. H. S. Lloyd & Co., De Grasse, Havre, 2 cs.

NEWS PRINT

A. S. Zabriskie, Muenchen, Bremen, 110 rolls.
Box Board & Lining Co., Muenchen, Bremen, 110 bls.
Perkins, Goodwin & Co., Muenchen, Bremen, 261 rolls.
National City Bank, Nordvard, Hamburg, 37 bls.
Ossian Ray, Gripsholm, Gothenburg, 110 rolls.

PRINTING PAPER

E. Dietzgen & Co., Veendam, Rotterdam, 34 cs.
Dinglestedt & Co., Veendam, Rotterdam, 7 cs.
F. Henjes, Jr., Veendam, Rotterdam, 5 cs.
H. Reeve Angel & Co., Inc., Muenchen, Bremen, 1 cs.

WRAPPING PAPER

Beekman Paper & Card Co., Veendam, Rotterdam, 10 cs.
Bendix Paper Co., A. Ballin, Hamburg, 10 bls.
Birn & Wachenheim, Pennland, Antwerp, 11 cs.
E. V. Hadley, Pennland, Antwerp, 7 rolls.
F. C. Strype, Pennland, Antwerp, 6 cs., 1 roll.
Esbee Corp., Pennland, Antwerp, 26 cs.
Japan Paper Co., American Banker, London, 6 cs.
C. K. MacAlpine & Co., Gripsholm, Gothenburg, 6 bls., 24 cs.
E. Dritzgen & Co., Gripsholm, Gothenburg, 233 rolls.

PACKING PAPER

Hensel, Bruckman & Lorbacher, Veendam, Rotterdam, 2 cs.
Haule Wax Paper Manfg. Co., A. Ballin, Hamburg, 15 cs.
K. H. Schmidt, Nordvard, Hamburg, 108 rolls.

STENCIL PAPER

Arlac Dry Stencil Co., A. Ballin, Hamburg, 42 cs.

PERGAMYN PAPER

F. C. Strype, A. Ballin, Hamburg, 37 cs.
F. C. Strype, Nordvard, Hamburg, 37 cs.

WRITING PAPER

R. F. Downing & Co., A. Ballin, Hamburg, 5 cs.
C. Steiner, A. Ballin, Hamburg, 2 cs.
Windsor & Newton, Tuscania, London, 2 cs.
The Eleto Co., Majestic, Southampton, 4 cs.
American Express Co., Indep. Hall, Havre, 5 cs.
Japan Paper Co., De Grasse, Havre, 3 cs.
D. C. Andrews & Co., De Grasse, Havre, 6 cs.

LETTER PAPER

Marshall Field & Co., De Grasse, Havre, 5 cs.

COVER PAPER

International Forwarding Co., A. Ballin, Hamburg, 7 cs.

PARCHMENT PAPER

Bendix Paper Co., A. Ballin, Hamburg, 2 cs.
Walker, Goulard, Plehn Co., Nordvard, Hamburg, 9 bls.

TRUNK PAPER

P. H. Petry & Co., A. Ballin, Hamburg, 3 cs.

COLORED PAPER

Borden Riley Paper Manfg. Co., Pennland, Antwerp, 7 cs.
C. W. Williams & Co., Pennland, Antwerp, 15 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., Tuscania, London, 1 cs.

DRAWING PAPER

H. Reeve Angel & Co., Inc., Tuscania, London, 2 cs.

DESIGN PAPER

Mohawk Carpet Mills, Inc., Andania, Liverpool, 1 cs.

PHOTO PAPER

J. H. Schroeder Banking Corp., Muenchen, Bremen, 5 cs.
J. J. Gavin, Andania, Liverpool, 2 cs.

TRANSFER PAPER

F. L. Kramer & Co., Muenchen, Bremen, 15 cs.

DECALCOMANIA PAPER

C. W. Sellers, Muenchen, Bremen, 4 cs.
C. W. Sellers, A. Ballin, Hamburg, 4 cs.
B. F. Drakenfeld & Co., Andania, Liverpool, 34 cs. (duplex).
B. F. Drakenfeld & Co., Andania, Liverpool, 1 cs. (simplex).

GOLD COATED PAPER

F. M. Hill, Muenchen, Bremen, 8 cs.

SURFACE COATED PAPER

G. W. Sheldon & Co., Minnetonka, London, 1 cs.
P. C. Zuhlke, Pennland, Antwerp, 154 cs.

MUSLIN PAPER

P. J. Schweitzer, De Grasse, Havre, 9 cs.

TISSUE PAPER

B. F. Drakenfeld & Co., Andania, Liverpool, 3 cs.

PAPER TUBES

The Arles Co., De Grasse, Havre, 9 cs.

STRAW BOARD

Perkins, Goodwin & Co., Veendam, Rotterdam, 220 rolls.
J. P. Heffernan Paper Co., Veendam, Rotterdam, 80 rolls.
A. Vurk, Veendam, Rotterdam, 480 rolls.
R. Wilson Paper Corp., Coahoma County, Antwerp, 183 rolls.

MISCELLANEOUS PAPER

Tamm & Co., Veendam, Rotterdam, 6 cs.
Cheramy, Inc., Majestic, Southampton, 1 cs.
Houbigant, Inc., Majestic, Southampton, 6 cs.
Arkell Safety Bag Co., Gripsholm, Gothenburg, 134 rolls.
Gilbert Paper Co., Gripsholm, Gothenburg, 98 bls.
Pratt Paper Co., Gripsholm, Gothenburg, 1,415 rolls.
Lincoln Paper Co., Gripsholm, Gothenburg, 38 bls.
E. H. Sergeant & Co., Gripsholm, Gothenburg, 6 cs.
Canson & Montgolfier, De Grasse, Havre, 12 cs.
Standard Products Corp., De Grasse, Havre, 72 cs.
Distinctive Writing Paper Co., De Grasse, Havre, 8 cs.
Keller Dorian Paper Co., De Grasse, Havre, 13 cs.
Japan Paper Co., Roma, Genoa, 4 cs.

RAGS, BAGGINGS, ETC.

Equitable Trust Co., Muenchen, Bremen, 568 bls. rags.
Amtorg Trading Co., Muenchen, Bremen, 39 bls. rags.
E. J. Keller Co., Inc., Muenchen, Bremen, 49 bls. rags.
Goldman, Sachs & Co., Muenchen, Bremen, 175 bls. rags.
Brown Bros. & Co., Muenchen, Bremen, 24 bls. rags.
Darmstadt, Scott & Courtney, Coahoma County, Antwerp, 184 bls. flax waste.
Chemical National Bank, Coahoma County, Antwerp, 13 bls. rags.
E. J. Keller Co., Inc., Coahoma County, Antwerp, 160 bls. flax waste.
Equitable Trust Co., Coahoma County, Antwerp, 105 bls. flax waste.
Castle & Overton, Inc., Coahoma County, Antwerp, 91 bls. bagging.
Kidder Peabody Accep. Corp., Coahoma County, Antwerp, 10 bls. rags.
A. W. Fenton, Inc., A. Ballin, Hamburg, 105 bls. rags.
Jaffe Products Co., Orizaba, Havana, 25 bls. rags.
V. Galaup, Indep. Hall, Dunkirk, 138 bls. rags.
Salomon Bros. & Co., Indep. Hall, Dunkirk, 238 bls. rags.
Castle & Overton, Inc., Indep. Hall, Dunkirk, 323 bls. rags.
Castle & Overton, Inc., Indep. Hall, Havre, 72 bls. bagging.
V. Galaup, Indep. Hall, Havre, 318 bls. rags.
B. D. Kaplan, Andania, Liverpool, 47 bls. rags.
Equitable Trust Co., Andania, Liverpool, 6 bls. rags.
Equitable Trust Co., Bellflower, Manchester, 88 bls. new cuttings.
E. J. Keller Co., Inc., Bellflower, Manchester, 62 bls. bagging.
Castle & Overton, Inc., Bellflower, Belfast, 109 bls. rags.
M. Snedeker Corp., Bellflower, Belfast, 85 bls. rags.
American Exchange Irving Trust Co., Clara, Venice, 158 bls. rags.
Banco Com'l Italiane Trust Co., Clara, Bari, 401 bls. rags.
L. H. Abenheimer, Clara, Bari, 1 ble. rags.
French American Banking Corp., Clara, Bari, 140 bls. rags.
Castle & Overton, Inc., A. Lopez, Barcelona, 311 bags old pickers.
Castle & Overton, Inc., A. Lopez, Barcelona, 354 bls. rags.
C. R. Spence, Idaho, Aberdeen, 309 bls. rags.
E. Butterworth & Co., Inc., Idaho, Hull, 199 bls. rags.
Castle & Overton, Inc., Boston City, Bristol, 139 bls. bagging.
C. R. Spence, Boston City, Bristol, 298 bls. rags.
Castle & Overton, Inc., Ft. Armstrong, San Francisco, 25 bls. rags.

OLD ROPE

E. J. Keller Co., Inc., Muenchen, Bremen, 47 bls.
Brown Bros. & Co., Boston City, Bristol, 93 coils.

CASEIN

Atterbury Bros., Inc., France Maru, Hamburg, 333 bags, 25,000 kilos.

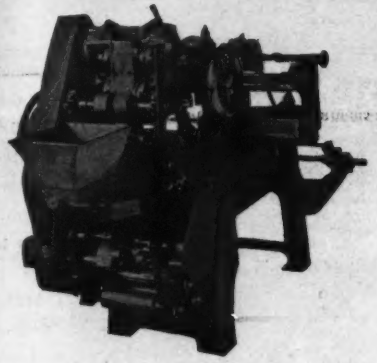
CHINA CLAY

L. A. Salomon Bros., Coahoma County, Antwerp, 74 casks, 240 bags.

WOOD PULP

Castle & Overton, Inc., Muenchen, Bremen, 497 bls. wood pulp.
American Exchange Irving Trust Co., Muenchen, Bremen, 170 bls. wood pulp.
Lagerloef Trading Co., A. Ballin, Hamburg, 440 bls. wood pulp, 71 tons.
Chemical National Bank, Nordvard, Hamburg, 128 bls. wood pulp, 25 tons.
Bulkley, Dunton & Co., Nordvard, ——, 350 bls. wood pulp, 50 tons.
E. J. Keller Co., Inc., France Maru, Hamburg, 144 bls. wood pulp, 21 tons.
American Exchange Irving Trust Co., Clara, Trieste, 294 bls. wood pulp.

(Continued on page 74)



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Special Machinery Designed and Built

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Superheaters :: Preheaters

Geo. F. Hardy, Consulting Engineer, New York
For Southern Paper Co., two orders, total 4700 H.P.
For St. Croix Paper Co. ..... 1200 H.P.
For Brown Paper Mill Co. ..... 3430 H.P.
Central Paper Co., Muskegon, Mich., four orders, total ..... 3100 H.P.
Philadelphia Paper Mfg. Co., Phila., three orders, total ..... 2400 H.P.
Jessup & Moore Paper Co., Phila., four orders, total ..... 4750 H.P.
Ontario Paper Co., Ltd.
For Daily Newspaper Co., North Tonawanda, N. Y. ..... 2034 H.P.
Filer Fibre Company, Filer City, Mich. ..... 1500 H.P.
John Lang Paper Co., Philadelphia, Pa. ..... 416 H.P.
Bayless Manufacturing Corp., Austin, Pa. ..... 1300 H.P.
Northern Board & Paper Co., San Francisco, Cal., two orders, total ..... 400 H.P.
Crown Willamette Paper Co., San Francisco, Cal., two orders, total ..... 750 H.P.
Delaware Hard Fibre Co., Wilmington, Del., two orders, total ..... 920 H.P.
Kleckhefer Container Co., Delair, N. J. ..... 1800 H.P.

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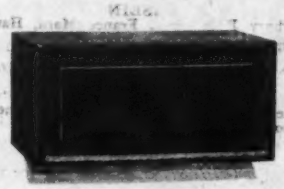

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Stamping Division
NORTHERN CORRUGATING CO.
Green Bay, Wisconsin

Imports of Paper and Paper Stock

(Continued from page 72)

E. M. Sergeant & Co., Gripsholm, Gothenburg, 1,197 bls. dry soda pulp.
Parsons & Whittemore, Inc., Gripsholm, Gothenburg, 120 bls. sulphite.

WOOD PULP BOARDS

C. K. MacAlpine & Co., Gripsholm, Gothenburg, 5 bls.

PHILADELPHIA IMPORTS

E. A. Stone, Western Ally, Rotterdam, 455 bls. rags.
D. I. Murphy, Canadian Conqueror, Melbourne, 57 bls. old rope.
Tradesmans National Bank, London Mariner, London, 190 bls. rags.
A. H. Searle, London Mariner, London, 91 bls. rags.
Bank of The Manhattan Co., London Mariner, London, 81 bls. rags.
Bank of The Manhattan Co., London Mariner, London, 104 coils old rope.
Phila. Girard Natl. Bank, London Mariner, London, 224 bls. rags.
J. Lang Paper Co., London Mariner, London, 312 bls. rags.
J. B. Moore Co., London Mariner, London, 99 bls. rags.
Paper Service Co., London Mariner, London, 2 cs. fancy paper.
E. Butterworth & Co., Inc., Boston City, Bristol, 498 bls. rags.
Bank of The Manhattan Co., Boston City, Bristol, 69 bls. rags.
J. A. Steer & Co., Boston City, Bristol, 420 bls. rags.
E. J. Keller Co., Inc., West Harcuvar, Bremen, 8 bls. rags.
E. J. Keller Co., Inc., Isarco, ——, 136 bls. rags.
Castle & Overton, Inc., Innaren, Sweden, 600 bls. wood pulp.
Castle & Overton, Inc., Burgerdyk, Holland, 566 bls. rags.
Castle & Overton, Inc., Texas, Denmark, 144 bls. rags.
Castle & Overton, Inc., Bristol City, England, 108 bls. rags.

NEW ORLEANS IMPORTS

WEEK ENDING NOVEMBER 5, 1927

Castle & Overton, Inc., West Totant, England, 115 bls. rags.

BOSTON IMPORTS

Brown Bros. & Co., Idaho, Hull, 279 bls. old rope.
Buck, Kiaer & Co., Inc., Malmen, Stockholm, 600 bls. sulphite.
Castle & Overton, Inc., West Campgaw, Germany, 2,711 bls. wood pulp.

BALTIMORE IMPORTS

WEEK ENDING NOVEMBER 5, 1927

G. M. Graves Co., Hatteras, Dublin, 120 bls. rags.
American Exchange Irving Trust Co., Casper, Kotka, 600 bls. wood pulp, 102 tons.
Johanson, Wales & Sparre, Inc., Casper, Obbola, 3,500 bls. sulphate, 508 tons.
Pagel, Horton & Co., Inc., Casper, Honrefors, 2,400 bls. sulphite, 400 tons.
Pagel, Horton & Co., Inc., Casper, Husum, 720 bls. sulphite, 120 tons.
Pagel, Horton & Co., Inc., Casper, Husum, 8,490 bls. sulphate, 1,415 tons.
Scandinavian Pulp Agency, Inc., Casper, Gothenburg, 508 bls. sulphite, 101 tons.
Scandinavian Pulp Agency, Inc., Casper, Gothenburg, 2,332 bls. kraft pulp, 469 tons.
Certainteed Products Corp., Indep. Hall, Dunkirk, 241 bls. rags.
Congoleum Nairn Co., Indep. Hall, Dunkirk, 440 bls. rags.
J. W. Pryor, Indep. Hall, Havre, 6 cs. writing paper.
S. Shapira & Son, Indep. Hall, Havre, 63 bls. rags.
Congoleum Nairn Co., Indep. Hall, Havre, 129 bls. rags.
Woodpulp Service Corp., Texas, Oslo, 250 bls. wood pulp.
Castle & Overton, Inc., Westpool, Germany, 3,205 bls. wood pulp.
Castle & Overton, Inc., Bellepline, Rotterdam, 1,475 bls. wood pulp.

NORFOLK IMPORTS

Lagerloef Trading Co., Casper, Kotka, 1,217 bls. wood pulp, 203 tons.
American Exchange Irving Trust Co., Casper, Kotka, 150 bls. wood pulp, 25 tons.
Old Dominion Paper Co., Casper, Kotka, 114 rolls news print.
National City Bank, Casper, Kotka, 103 rolls news print.
Scandinavian Pulp Agency, Inc., Casper, Gothenburg, 3,048 bls. kraft pulp, 609 tons.
Scandinavian Pulp Agency, Inc., Casper, Gothenburg, 337 bls. sulphite, 67 tons.
Castle & Overton, Inc., Westpool, Germany, 334 bls. wood pulp.
Castle & Overton, Inc., Hannover, Germany, 170 bls. wood pulp.

Bids and Awards for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., November 9, 1927.—The Government Printing Office has received the following bids for 40,000 pounds of 24½x32—100⅛ white mimeograph paper: P. H. Glatfelter Company, at 6 cents per pound; R. P. Andrews Paper Company, 7.2 cents; Mathers-Lamm Paper Company, 7.5 cents; American Writing Paper Company, 7.5 cents; Dobler & Mudge, 8 cents; Old Dominion Paper Company, 6.49 cents; Walker Goulard Plehn Company, 6.7 and 6.4 cents, 6.9 and 6.65 cents; Virginia Paper Company, 6.25 cents; Whitaker Paper Company, 6.03 cents; and Hano Paper Corporation, 7.1 cents.

A number of paper awards have just been announced by the Government Printing Office as follows:

Barton, Duer & Koch will furnish 5,180 pounds (40,000 sheets) of 21x32½—129½ buff ledger paper at 18.25 cents per pound, bids for which were received on October 21.

The American Writing Paper Company will furnish 1,000 pounds (5,000 sheets) of 20x26 heavy executive cover paper at 16.5 cents per pound, bids for which were received on October 19.

The Port Huron Sulphite Pulp and Paper Company will furnish 45,010 pounds (160,000 sheets) of various sizes high finish sulphite manila tag board at 6.96 cents per pound, bids for which were received on October 17.

The Old Dominion Paper Company will furnish 2,615 pounds (56,250 sheets) of 21x32—46½ violet bond paper at 20.9 cents per pound, bids for which were received on October 12.

The Craew Manufacturing Company will furnish 2,172 pounds (6,000 sheets) of 22½ x 28½—362, 50 per cent fawn index at 29.5 cents per pound, bids for which were received on October 7.

The Perfect Safety Paper Company will furnish 1,000 pounds (12,500 sheets) of 22x34—No. 40 gray safety writing paper at 14.75 cents per pound, bids for which were received on October 5.

The R. P. Andrews Paper Company will furnish 3,000 pounds (3,000 sheets) of 22x28 gray photo mount board at 6.24, bids for which were received on October 3.

The Whitaker Paper Company will furnish 50,000 sheets (250 pounds) of 12x18 manila tissue paper at 49 cents, bids for which were received on September 23.

Ditto, Inc., will furnish 5,050 sheets (280 pounds) of white sensitized paper at $69.15, bids for which were received on August 19.

"Bronze Jordan Knives"

The American Manganese Bronze Company, founders and metallurgical engineers, Holmesburg, Pa., has just issued an attractive and interesting pamphlet entitled "Bronze Jordan Knives." The pamphlet outlines the advantages of Hy-ten-sl bronze knives as compared with steel knives.

"Every mill superintendent," the pamphlet says, "is aware of the fact that *Corrosion* and *Erosion* shorten the life of *Steel Jordan Knives*. They are also aware that *Discoloration of Stock and Injury to Felts* from the resulting "rust" are ever present handicaps not to be minimized. Furthermore, to make matters worse, the steadily increasing pollution of streams is daily causing an increased amount of corrosion—therefore the matter of resisting this corrosion and erosion is of vital importance to every mill.

"The principal corrosive agent in these polluted streams is Sulphuric Acid, which in diluted state is very active. Where Alum is present in the stuff, besides acting as an abrasive, it sets free Sulphuric Acid, which is another condition stimulating corrosive action on Steel Knives.

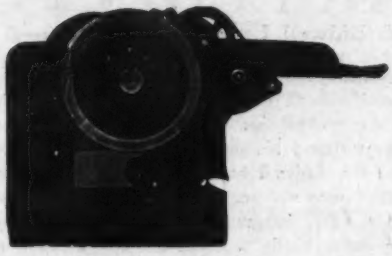
"Hy-ten-sl Bronze Knives *resist* this corrosion, erosion and abrasion. Accurate tests have proven that when subjected to a 3 per cent solution of Sulphuric Acid for a period of one month, Hy-ten-sl Bronze shows a penetration in inches of only .0017 as compared to .042 for Steel and .0036 for Phosphor Bronze.

"Hy-ten-sl Bronze Knives cost less in the long run and are much better during their entire life than Steel Knives. Although the initial cost is about three times that of the ordinary carbon steel, their use will prove, and is proving, their economy in the mills wherever used.

"Hy-ten-sl Bronze Knives maintain a uniform stock treatment. They wear out, but do not eat or wash out, furthermore, They Do Not Break Out, Or Tear Out When Properly Installed.

TAYLOR, STILES & COMPANY
GIANT
RIEGELSVILLE, N.J. U.S.A.

RAG CUTTERS



TAYLOR, STILES & COMPANY

Riegelsville, N. J., U. S. A.

Canadian Representatives

Waterous Engine Works Company, Ltd., Brantford, Ont., Can.

Sole Agents for Europe

R. J. Marx, 133-139 Finsbury Pavement, London, E. C.

SOLVAY

STANDARD IN SODA SINCE 1881

Quality and Service guaranteed by the Largest Source of Supply

Soda Ash
Caustic Soda

Over 75 stock distributing points assure prompt shipment with minimum transportation charges.

SOLVAY SALES CORPORATION

Alkalies and Chemical Products Manufactured by The Solvay Process Company

40 Rector Street New York

Boston Syracuse Chicago Indianapolis Cleveland Cincinnati Pittsburgh Detroit Philadelphia Kansas City Atlanta St. Louis

PORTLAND, OREGON

Portland is in the heart of the big timber region of the Pacific Northwest. It also has an abundance of cheap hydro-electric power for manufacturing purposes, good ocean and railway shipping facilities and a fair supply of skilled labor, practically all of which is non-union.

Portland is also an ideal place to live. It has a mild climate, good water and plenty of nice hotels, apartment houses and homes. Also good schools, theaters, libraries, clubs and parks.

I would be pleased to serve you in the location, design and construction of the new mill of yours.

HENRY BLACK

Complete Building Construction

383 Pittock Block - - - Portland, Oregon

Telephone Broadway 8060

Iron Workers, Cement Workers, Bricklayers, Carpenters, Roofers, Plumbers, Electricians, Cabinet-makers, Painters and Paperhangers; also Real Estate Bonds and Mortgages

GDC

If you plan to take up the Manufacture of

New Paper Specialties

or if you are confronted with color problems of any kind, such as fastness to light, fastness to alkali, two-sidedness, please consult our newly equipped laboratories and our experienced staff.

230 Fifth Avenue
NEW YORK

GENERAL DYESTUFF CORPORATION

New York Market Review

Office of THE PAPER TRADE JOURNAL,
Wednesday, November 9, 1927.

The local paper market continues normal, and the various grades are in good request. Supplies are reported to be moving into consumption at a steady pace. Prices are generally holding up to previous levels and few instances of shading have been reported. Sales forces of the leading organizations are reported to be doing a large volume of business; and although the past week has shown no activities out of the ordinary, manufacturers anticipate an upward trend during the balance of the year.

Production of news print is being upheld on a large scale, and the publishers are absorbing the output freely, as most of the newspapers are increasing their circulation and the size of their issues materially. Contract prices for the following year are expected to be announced at any time.

Box board and liner board are in good request. Trading in the coarse paper market is becoming more active and wrapping paper is in brisk demand. The market for tissue and fine papers continues sound. Prices are stable and unaltered.

Mechanical Pulp

Contract withdrawals of ground wood are moving forward in good volume and manufacturers report a satisfactory number of inquiries for future business. The arrival of cold weather is expected to bring increased activities. Meanwhile prices continue to hold up to schedule, in most instances.

Chemical Pulp

Trading in both imported and domestic chemical pulp has continued along routine lines. Supplies are moving steadily into consumption and a satisfactory volume of inquiries has been reported in the market. Prices are slightly lower on some grades but otherwise the schedule is being maintained with little difficulty.

Old Rope and Bagging

Both domestic and imported old rope continue in fair request. The market is stable, and prices are holding up to previously quoted levels. Gunny bagging is fairly quiet, but scrap bagging and burlap are in good demand. Prices with few exceptions are unchanged.

Rags

Business in the local rag market is still on the upward trend. Cuttings are in good request and domestic roofing rags show a strong undertone. Quotations are practically unaltered.

Waste Paper

No radical changes have been reported in the paper stock market. The lower grades of waste paper are being absorbed freely by the paper mills, and the higher grades are reported to be in good request. Book and kraft papers are enjoying an active demand. The advanced schedule recently reported is generally being upheld.

Twine

The market for the various grades of twine is increasingly strong as the Christmas shopping season draws nearer. With the demand for wrapping paper growing daily, the twine market should be very brisk at least until the new year. Prices rule steady to firm.

P. W. Bidwell Leaves B. F. Perkins & Son

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., November 8, 1927.—P. W. Bidwell who has been associated with B. F. Perkins & Son, Inc., for the past sixteen years, during the last ten years as general manager and Director, has resigned his position, same having taken effect on October 29. Mr. Bidwell has many friends in the textile, pulp paper industries who will regret to learn of his severing his long time connection. He has made no definite plans as yet for the future but expects shortly to make announcement of them in the trade.

CONSTRUCTION NEWS

(*Continued from page 70*)

machinery. A contract for piling for foundations has been let to the Russell Construction Company, Harbor Commission Building, Toronto. Work will proceed at once. James L. Carey, 208 North Laramie avenue, Chicago, Ill., is engineer.

Hull, Que.—The International Fibre Board Company, Ltd., Montreal, Que., has awarded a general building contract to the Fraser Construction Company, 83 Craig street, West, Montreal, for its proposed mill at Gatineau Point, near Hull, where site recently was acquired. The project will consist of a main unit, about 1200 ft. long, and a number of smaller structures, to cost close to $2,000,000, with machinery. Equipment will be provided for the employment of about 200 operatives for initial production.

New Companies, Etc.

New York, N. Y.—The Louis Kiev Paper Box Corporation has been incorporated with a capital of $15,000, to manufacture paper boxes and containers. H. H. Benjamin, 303 Fifth Avenue, New York, is one of the incorporators and representative.

Middletown, Conn.—The Shirley Stationery Company has been incorporated with a capital of $10,000, to deal in writing papers and other stationery products. The incorporators are H. S. Woods, R. B. Davies, and J. J. Shirley, 38 Oak street, Middletown; the last noted is representative.

Rochester, N. Y.—The Diamond Paper Box Company has recently filed notice of increase in capital from $25,000 to $50,000, for expansion.

Boston, Mass.—The Rosen Brothers Company has been incorporated with a capital of $25,000, to manufacture and deal in writing papers, etc. David Rosen is president; and Harry Noah, 147 Columbia Road, Dorchester, treasurer and representative.

St. Louis, Mo.—Weld, Inc., has been incorporated with a capital of $10,000, to deal in writing papers, other paper goods and stationery products. The incorporators are William G. and J. Garneau Weld, Litzsinger Road, St. Louis.

Pulp Burr Factory Planned

CENTRALIA, Wash., November 4, 1927.—A new industry is in prospect in Tenino in the form of a factory to manufacture pulp burrs. The project is being pushed by H. P. Scheel and his son, who hold patents on the process of manufacturing abrasive stones for pulp mills. They have interested several Tenino men in the venture and are now manufacturing test stones. If the test is successful, a plant will be erected.

The

ST. REGIS PAPER COMPANY

Daily Capacity 525 TONS

Newsprint
Catalog and Directory Papers
Fibre Wrapping Papers
Packers Oiled Manila
Specialties

General Sales Office

49 Wall St., New York

Farmers' Bank Bldg.
Pittsburgh, Pa.

In the grind of daily service

Fig. 106
Screwed Jenkins Standard Bronze Globe Valve

In the year in, year out grind of daily service, in the strains of frequent opening and closing, it is the reserve strength of a Jenkins Valve which counts most heavily. Reserve strength makes the difference between low and high maintenance costs.

Reserve strength is built into every genuine Jenkins Valve, as a matter of manufacturing policy. Metals are proved by analyses; design and construction provide for even distribution of metal; tests must show that a Jenkins is fit for its job before it leaves the factory.

At supply houses everywhere.

JENKINS BROS.

80 White Street.....New York, N. Y.
524 Atlantic Avenue.....Boston, Mass.
133 No. Seventh Street.....Philadelphia, Pa.
646 Washington Boulevard.....Chicago, Ill.
JENKINS BROS., Limited
Montreal, Canada London, England

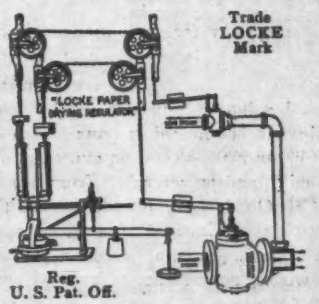
Always marked with the "Diamond"
Jenkins Valves
SINCE 1864

LOCKE Paper Drying Regulator

Trade LOCKE Mark

Controls both live and exhaust for any purpose where steam is used, or it will control the direct steam when used alone. While most sensitive to any change in temperature of dryers, it has been found to be perfectly reliable and, furthermore, it is not continually getting out of order—the common regulator trouble.

Other Locke Steam Specialties.



Reg. U. S. Pat. Off.

Locke Regulator Co., 76 North St., Salem, Mass.

Bought one on trial -has since bought four

The Terre Haute Paper Co. purchased one of these trucks some time ago on trial and were so well pleased with the results that they have since purchased a supply for each of their four plants, and figure that they have saved a great amount of time and cost in handling paper stock.

They save their cost in damage to rolls. They insure perfect handling of stock and are saving money in many paper plants throughout the country. Many report a saving of over 25%.

Our thirty day free trial offer will convince you that you need them.

SKID-EM-ON TRUCKS

Side Loader

CENTRAL MACHINE WORKS
437 S. SENATE AVE., INDIANAPOLIS, IND.

Miscellaneous Markets

Office of THE PAPER TRADE JOURNAL,
Wednesday, November 9, 1927.

Conditions in the local chemical market have remained practically the same during the last week, with a steady demand for paper makers' chemicals in evidence and prices holding well up to schedule. Contract withdrawals are moving in heavy volume and manufacturers report numerous inquiries for future business. Contract prices on bleaching powder for 1928 have been announced and remain unchanged, that is, $2 to $2.40 per 100 pounds, in large drums, at works, according to quantity. Those contract prices on other chemicals still to be announced are not expected to show any appreciable change.

BLANC FIXE.—The undertone of the blanc fixe market is steady, and both the pulp and the powder are in good request. Spot supplies are rather limited, and prices continue firm. The pulp is still selling at $60 per ton in bulk, while the powder is offered at from 4 cents to 4¼ cents a pound, in barrels, at works.

BLEACHING POWDER.—The market for bleaching powder continues sound. Contract withdrawals are moving at an excellent pace. Prices are holding up to schedule without difficulty. Bleaching powder is quoted at from $2 to $2.40 per 100 pounds, in large drums, at works, according to quantity. The newly announced contract prices for next year remain the same as those operative during the last year.

CASEIN.—The casein market is in a sound position. Shipments on contract continue to move at a satisfactory rate. Prices continue firm. Domestic casein is still quoted at from 17½ cents to 18½ cents a pound. The imported is quoted at from 18 cents to 18¼ cents a pound, all in bags, car lot quantities.

CAUSTIC SODA.—Business in the caustic soda market for the past week has been largely routine, with demand taking care of supplies satisfactorily. Prices remain steady to firm. Solid caustic soda is selling at from $3 to $3.10 per 100 pounds. The flake and the ground are quoted at from $3.40 to $3.50 per 100 pounds, in large drums, at works.

CHINA CLAY.—Steadiness prevails in the china clay market. Demand for both the imported and the domestic product continues normal for the season, and contract withdrawals are moving steadily into consumption. Prices remain the same. English china clay is offered at from $15 to $25 a ton, ship side. Domestic paper makers' clay is quoted at from $8 to $9 a ton, in bulk, at mine, and pulverized at from $10 to $12 a ton.

CHLORINE.—The undertone of the chlorine market is strong. Supplies continue to move into consumption in heavy volume. Chlorine is quoted at 4 cents a pound in tanks, or multi-unit cars, at works, on contract orders. Spot quotations range from 4¼ cents to 4½ cents a pound. Recently published contract prices for 1928 show a decline of one-half cent a pound.

ROSIN.—No changes in the rosin market were reported for the last week. Offerings at the principal centers are rather limited and prices are firm. At the naval stores, the grades of gum rosin used in the paper mills are still quoted at from $9 to $9.20 per 280 pounds gross, in barrels, ex dock. Wood rosin is quoted at $9.50 per 280 pounds gross, southern shipping points.

SALT CAKE.—The undertone of the salt cake market is steady. This product is in fair demand, and prices remain firm and unchanged. Salt cake is still quoted at from $18 to $19 a ton, in bulk, at works. Chrome salt cake is quoted at from $14 to $15 a ton, in bulk, at works.

SODA ASH.—Production of soda ash is still being maintained in large volume with adequate consumption. The market is sound, and prices are holding up to schedule without difficulty. Contract quotations on soda ash, in car lots, at works, are as follows: in bulk, $1.20; in bags, $1.32½; in barrels, $1.57½.

STARCH.—Leading starch refiners report a consistently heavy demand for this product. No changes have been made in the price schedule, and special paper makers' starch is still offered at $3.07 per 100 pounds in bags, and $3.25 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—Trading in sulphate continued active during the past week. Heavy shipments on contract moved forward to meet a brisk demand. Prices still rule steady to firm. Commercial grades of sulphate of alumina are quoted at from $1.40 to $1.45 per 100 pounds. The iron free is quoted at from $2 to $2.05 per 100 pounds, in bags, at works.

SULPHUR.—There is an excellent demand for sulphur and a large volume of inquiries for future business. Prices are still holding up to schedule. Sulphur is quoted at from $18 to $19 a ton, in bulk, at mine. The spot quotation is $20 a ton.

TALC.—No marked changes have been reported in the talc market for some time. The demand for this product is good, and contract withdrawals are moving forward normally. Quotations on domestic talc still range from $16 to $18 a ton, at eastern mines; French talc is selling at from $18 to $22, ship side.

REPORT ON PACIFIC COAST

(*Continued from page 42*)

the experience of others one has but to observe the growth of the sulphate pulp industry of this country. There is every indication that the chief competitor of the developing sulphate mills in the Northwest will be the sulphate pulp industry of the South. As far as could be observed those proposing to develop sulphate mills in the Northwest are going ahead with little or no study of the growth of the sulphate industry in the Southern states. The sulphate industry of the Northwest cannot be materially different from that of the South and yet it would seem as if the Northwest must carry through its own experiments and have its own experience without building upon the research and experience of the South.

There is at the present time a well established pulp and paper industry on the West Coast. It would be exceedingly helpful in the future development of the industry if those who are planning and building new mills could but profit by the hard pioneer work that has already been done. It is but commenting on the history of the industry throughout the country to observe that some of those who are planning new pulp and paper mills on the West Coast are confident that because they have manufactured lumber or operated banks, or been successful in some other industry, they can as easily build and operate a pulp or paper mill on a profitable basis. One admires their courage but wonders as to the results.

Whatever one may think as to the value of the experience of others or as to the necessity of having the right kind of charts or compasses to assist in following the difficult course of future development of the industry, it is certain that there is no other country in the world and no other section of this great country that offers better facilities for the right development of the pulp and paper industry than the great Northwest, blessed as it is with virgin forests and the promise of new forests. If one will but enumerate the new developments and additions to already existing mills that have taken place in the Northwest in the last five years, it will be very evident that greater growth has already taken place in the Northwest in the past five years than in any other section of this country during the same period.

Should Be Based Soundly Upon Facts

We may look for a still greater pulp and paper industry in the Northwest in the years to come. However, it is the hope of the industry itself and it should be the hope of every other agency working for sound and profitable industrial development that those controlling the funds which the industry must have to support profitable operation and growth shall see to it that future growth shall be based soundly upon the facts which have come out of the experiences and the experiments of the industry wherever it has been developed in this country or abroad.

FLEXCO

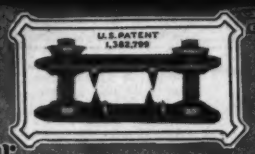
H - D
Belt Fasteners

Every year sees a large increase in the number of users of FLEXCO H. D. Belt Fasteners. Their compression grip has worked out most satisfactorily from the practical standpoint. Note the tight butt joint. Made in five sizes for all conveyors from ¼ inch up to the largest.

The new FLEXCO Clip speed up application. They hold belt heads rigidly in position as plate while ends are tightened. Now included in every box without added cost.

Write us for full description and nearest jobber. Consultation invited.

Flexible Steel Lacing Company
689 Lexington Street Chicago, Illinois

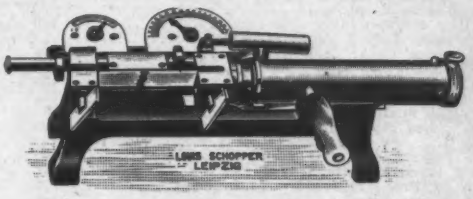


for
Conveyor Belts

708-HD

SCHOPPER

RAPID PAPER TESTER



STOP GUESSING!

Every Paper Jobber, Paper Buyer, and Paper Maker should have one in order to judge Paper Quality by Scientific Tests.

Write for Information

"Schopper" Micrometers, Tensile Testers, Folding Testers, Freeness Testers

The World's Standard Instruments

FOREIGN PAPER MILLS, INC.
Sole Agents for United States and Canada
72 DUANE ST. NEW YORK

TRIUNE

AND

MULTIPLE PLY
DRYER FELTS

Serve every Felt Purpose in an efficient and satisfactory way.

ENGLISH or BAKER WOVEN

Made in three, four, five and six ply—60" to 214" wide.

FITCHBURG DUCK MILLS
FITCHBURG, MASS.

For 82 Years Makers of Fine Faced Felts for Papermakers

Clay

300 tons daily

AMERICAN MADE FOR AMERICAN TRADE

AT LAST!!

"An American Coating Clay"

H. T. Brand Coating Clay, Highest Grade Filling Clay, being used in some of the largest paper mills in the country. Send for samples and article on *"An American Coating Clay."* Forty-two years experience in American washed clays are back of this product.

Let us submit sample and quote you.

THE
EDGAR BROS. CO.
110 William St.,
NEW YORK

Market Quotations

Quoted by Hepburn & Co., 74 Broadway, N. Y. City, to whom all inquiry for quotations on these or any other Securities is referred.

BONDS	BID	OFFERED
Advance Bag & Paper, 7s 1943	105	107
A. P. W. Pulp & Power, 7s 1945	101	102
American Writing Paper, 6s 1947	80	82
Bastrap Pulp & Paper, 6½s 1940	100	103
British Columbia Pulp & Paper, 6s 1950	85	90*
Beaver Products Corp., 7½s 1942	106	109
Brown Paper Co., 1st 5½s 1946	96½	99
Bryant Paper Co., 6s 1942	100½	102
Cape Breton Pulp & Paper, 6s 1932	101	103
Central Paper Serial 6, 6½s 1942	89	...
Champion Coated Paper, 6s 1926 to 1932	99	...
Champion Fibre, 8s 1930	100	...
Champion Paper Corp'n, 1st 6s 1945	95	97
Continental Paper Products, 6½s 1943	88	91½
Cornell Wood Prod., 7½s 1937	100	104*
Crown Willamette Paper, 6s 1951	100	102
Donnaconna Paper, 6s 1940	101	102½
Dells Paper & Pulp Serial, 6s 1926-38	*95	...
Eastern Mfg. Co., 7s 1938	89	91
Eddy Paper, 7½s 1931	101	103
Escanaba Paper Serial, 6s 1928	99¼	...
Filer Fibre Serial, 7s 1926-39	95	...
Fort Orange Paper, 7s 1942	99	102
Fox River Paper, 7s 1931	99	...
Gilbert Paper Co., 6½s 1926-29	91	None
Hammermill Paper, 6s 1939	100	103*
Hoberg Paper & Fibre, 7s 1937	94½	96
Itaska Paper & Prairie River Power, J+5½s 1926-38	99	101
Itaska Paper, 1st 6s 1933-38	99	101
Kalamazoo Veg. Parchment, 6s 1938	98	...
Marinette & Menominee, 7½s 1936	100	103
Menasha Printing & Carton, 6½s 1939	99½	...
Monroe Paper Products, 7½s 1932	96	...
Munising Paper, 6s 1927-36	96	100
Nekooss Edwards, 1st Ref. 6s 1928 to 1942	96	99*
Orono Pulp & Paper, 6s 1943	98	...
Orono Pulp & Paper, 5s 1941	94	...
Oswego Falls Corp., 6s 1941	98	100*
Oxford Paper, 6s 1947	104	...
Paepcke Paper Mills, 7s 1930	99	None
Parsons Pulp & Lumber, 7s 1928	97	...
Parker Young Co., 6½s 1944	96½	98½
Paterson Parchment Paper, 6s 1938	100½	102
Penobscot Chemical Fibre, 6s 1942	98	...
Queens City Paper, 7s 1932	95	100*
Richardson Co., 6s 1938	100	...
Spanish River Pulp & Paper, 8s 1941	108	110
Stevens & Thompson Paper, 6s 1942	93	95
St. Anne Paper, 6½s 1946	99	101
St. Croix Paper, 5s 1926-37	95	98*
St. Regis Paper Serial, 6½s 1926-35	99½	101
Tait Paper & Color Industries, 6s 1934	90	95
Taggart Bros. Co., 6s 1944	94	97
Ticonderoga Pulp & Paper, 5s 1930	94	98
Ticonderoga Pulp & Paper, 6s 1940	99	101
Warren (The S. D.) Company, 6s 1945	99	101
Wotab Paper, 6½s 1943	102	...
Westfield River Paper, 7s 1926-43	90	...
Whitaker Paper, 7s 1942	106	108

STOCKS	BID	ASKED
Advance Bag & Paper, 8% Pfd.	100	None
Am. Tissue Mills, 7% Pfd.	95	100
Bedford Pulp & Paper, 6½s 1942	98½	None
British Columbia P. & P., Pfd.	65	70
Brompton Pulp & Paper, 8% Pfd.	93	98*
Brown Co., 5½s 1946	97½	99½
Brown Corpn., 7% Pfd.	97	100*
Central Paper, 7s 1933	85	None
Champion Fibre, 7% Pfd.	105	...
Diem & Wing, 7% Cum. Pfd.	87	...
Donnaconna Paper, Com.	58	...
Donnaconna Paper, Pfd.	99	None
Eastern Mfg. Co., 1st Pfd.	34	37
Gair Company, 5½s 1942	96	99
Great Northern Paper, Com.	72	75
Hammermill Paper, 7% Pfd.	105	110
Hinde & Dauch, Com.	135	...
Hinde & Dauch, Pfd.	100	...
Holyoke Card & Paper	150	None
Marathon Paper Mills, Com.	125	...
Midwest Box Co., Pfd. 8%	80	85
Midwest Box Co., Pfd. 6%	55	65
Louis De Jonge Co., 7% Pfd.	93	96
Oxford Papers, Com.	160	170
Oxford Paper Co., Pfd.	175	...
Penobscot Chemical Fibre, Com.	65	75*
Richardson Co., 7% Pfd.	104	...
River Raisin Paper, 6s 1936	96	...
Rubberoid Company	68	72
Seaman Container, Class B (par $1)	1	None Off.
Seaman Paper Co.	Wanted	None Off.
St. Croix Paper	150	170
St. Regis Paper Co., 7% Cum. Pfd.	101½	104½
Westfield River Paper Co., 1st Pfd.	Wanted	None Off.
West Virginia Pulp and Paper, Com.	53	57
West Virginia Pulp and Paper, Pfd.	101	103
Whittaker Paper, 7% Cum. Pfd.	97	103

* Nominal.

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine Sized	8.00	@11.00
News—		
Rolls, contract	3.25	@ —
Rolls, transient	3.25	@ 3.50
Sheets	3.65	@ 3.85
Side Runs	3.00	@ 3.75
Book, Cased—		
S. & S. C.	6.35	@ 7.75
M. F.	6.25	@ 7.75
Coated and Enamel	8.00	@15.00
Lithograph	8.00	@15.00
Tissues—Per Ream—		
White No. 1	.75	@ 1.00
Anti-Tarnish	1.10	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.75	@ .85
Kraft	.90	@ 1.00
Manila	.75	@ .85
Kraft—		
No. 1 Domestic	6.25	@ 6.50
No. 2 Domestic	5.25	@ 5.50
Southern	4.75	@ 5.25
Imported	6.50	@ 7.00
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	5.00	@ 5.50
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.75	@ 3.00
Screenings	3.00	@ 3.25
Card Middles	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

(Delivered New York)

Boards—per ton—		
News	50.00	@52.50
Straw	53.50	@57.50
Chip	47.50	@50.00
Binders' Boards	70.00	@75.00
Sgl. Mla. Lt. Chip.	57.50	@60.00
Wood Pulp	80.00	@85.00
Container	67.50	@72.50

Mechanical Pulp

(Ex-Dock)

No. 1 Imported—		
Moist	28.00	@30.00
Dry	32.00	@34.00

(F. o. b. Mill)

No. 1 Domestic	26.00	@30.00
Screenings	15.00	@20.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.40	@ 4.50
Easy Bleaching	2.65	@ 2.80
No. 1 strong unbleached	2.40	@ 2.65
Mitscherlich unbleached	2.55	@ 3.25
No. 2 strong unbleached	2.30	@ 2.40
No. 1 Kraft	2.65	@ 2.75
No. 2 Kraft	2.40	@ 2.50
Sulphate—		
Bleached	3.65	@ 3.85

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.40	@ 4.75
Easy Bleaching Sulphite	2.60	@ 2.75
News Sulphite	2.40	@ 2.65
Mitscherlich	3.25	@ 3.70
Kraft (Domestic)	2.60	@ 3.30
Soda Bleached	3.25	@ 3.50
Sulphate Screenings—		
Coarse	.75	@ .85
Refined	1.50	@ 1.85

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	11.75	@12.25
New White, No. 2	8.00	@ 8.50
Silesias No. 1	7.25	@ 7.75
New Unbleached	10.50	@11.00
Washables	4.25	@ 4.75
Fancy	5.50	@ 6.00
Blue Overall	6.75	@ 7.25
New Blue Prints	5.25	@ 5.50
New Soft Blacks	5.25	@ 5.75
Mixed Khaki Cuttings	4.75	@ 5.25
Pink Corset Cuttings	8.00	@ 8.50
O. D. Khaki Cuttings	5.25	@ 5.75
Men's Corduroy	3.75	@ 4.25
New Mixed Blacks	3.50	@ 3.75

Old Rags

White, No. 1—		
Repacked	5.75	@ 6.50
Miscellaneous	4.75	@ 5.25
White, No. 2—		
Repacked	3.25	@ 3.75
Miscellaneous	2.75	@ 3.00
St. Soiled, White	2.25	@ 2.40
Thirds and Blues—		
Repacked	2.25	@ 2.50
Miscellaneous	1.75	@ 2.00
Black Stockings	3.25	@ 3.75
Roofing Rags—		
Cloth Strippings	1.70	@ 1.80
No. 1	1.70	@ 1.80
No. 2	1.50	@ 1.60
No. 3	1.30	@ 1.40
No. 4	1.25	@ 1.35
No. 5A	.95	@ 1.05

Foreign Rags

New Light Silesias	7.00	@ 7.50
Light Flannelettes	7.75	@ 8.50
Unbleached Cottons	10.00	@11.00
New White Cuttings	10.50	@11.50
New Light Oxfords	7.00	@ 7.50
New Light Prints	5.50	@ 6.50
New Mixed Cuttings	3.00	@ 3.50
New Dark Cuttings	2.75	@ 3.25
No. 1 White Linens	7.25	@ 8.00
No. 2 White Linens	5.50	@ 6.25
No. 3 White Linens	4.50	@ 5.00
No. 4 White Linens	3.00	@ 3.50
Old Extra Light Prints	2.75	@ 3.25
Ord. Light Prints	2.25	@ 2.50
Med. Light Prints	1.90	@ 2.10
Dutch Blue Cottons	2.25	@ 2.50
German Blue Linens	2.50	@ 2.75
German Blue Cottons	2.00	@ 2.25
Checks and Blues	1.75	@ 2.00
Lindsay Garments	1.85	@ 1.95
Dark Cottons	1.65	@ 1.70
Shoppery	1.55	@ 1.60
French Blues	2.25	@ 2.50

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.70	@ 1.80
Domestic	1.80	@ 1.90
Wool Tares, light	1.60	@ 1.70
Wool Tares, heavy	1.60	@ 1.70
Bright Bagging	1.60	@ 1.70
Small Mixed Rope	1.30	@ 1.50
Manila Rope—		
Foreign	3.25	@ 3.65
Domestic	4.00	@ 4.25
New Burlap Cut	2.75	@ 3.00
Hessian Jute Threads—		
Foreign	3.50	@ 4.00
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, White, No. 1	3.40	@ 3.65
Hard, White, No. 2	2.90	@ 3.05
Soft, White, No. 1	2.90	@ 3.10
Flat Stock—		
Stitchless	1.30	@ 1.35
Overissue Mag.	1.30	@ 1.35
Solid Flat Book	1.25	@ 1.30
Crumpled No. 1	.90	@ 1.00
Solid Book Ledger	1.90	@ 2.10
Ledger Stock	1.60	@ 1.70
New B. B. Chips	.65	@ .75
Manilas—		
New Env. Cut	2.40	@ 2.60
New Cuttings	1.60	@ 1.85
Extra No. 1 old	1.25	@ 1.35
Print	.85	@ .95
Container	.70	@ .80
Bogus Wrapper	.75	@ .85
Old Kraft Machine Compressed bales	2.00	@ 2.10
News—		
No. 1 White News	1.75	@ 1.80
Strictly Overissue	.85	@ .90
Strictly Folded	.70	@ .75
No. 1 Mixed Paper	.55	@ .60
Common paper	.35	@ .40

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Twines

(F. o. b. Mill)

Cotton—			
No. 1	.39	@	.40
No. 2	.37	@	.38
No. 3	.36	@	.37
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.21	@	.23
No. 2	.20	@	.22
Tube Rope—			
4-ply and larger	.18	@	.19
Fine Tube Yarn—			
5-ply and larger	.23	@	.27
4-ply	.24	@	.28
3-ply	.26	@	.30
Unfinished India—			
Basis	.16	@	.17
Paper Makers Twine			
Balls	.13	@	.15
Box Twine, 2-3 ply	.17	@	.19
Jute Rope	.21	@	.23
Ameri. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.18	@	.20
No. 2 Basis	.16	@	.18
Sisal Lath Yarn—			
No. 1	.16	@	.18
No. 2	.14	@	.16
Manila Rope	.24	@	.26

CHICAGO

All Rag Bond	.35	@	.41
No. 1 Rag Bond	.25	@	.35
No. 2 Rag Bond	.14	@	.25
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¼	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¼
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
News—Roll, mill	.03½	@	.04¼
News—Sheets, mill	.03¾	@	.04¾
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¾
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.05¾	@	.06¼
Southern Kraft	.04½	@	.05
No. 2 Kraft	.05	@	.05¼
Wool Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue—			
24x36 Sheet	.07	@	.07¾
White Tissue—			
20x30 Sheet	.07¼	@	.07½
Boards, per ton—			
(Delivered Central Territory)			
Plain Chip	45.00	@	—
Solid News	47.50	@	—
Manila Lined Chip	$55.00	@	—
Container Lined—			
(Delivered Central Territory)			
85 Test	65.00	@	70.00
100 Test	70.00	@	—

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.80	@	2.90
White Env. Cuttings	3.60	@	3.70
No. 1 Soft Shavings	2.50	@	2.60
No. 1 Mixed	1.00	@	1.05
No. 2 Mixed	.95	@	1.00
Ledger & Writings	1.55	@	1.65
Solid Books	1.20	@	1.30
Blanks	1.75	@	1.80
Krafts	1.90	@	2.05
New Kraft Cuts	2.25	@	2.35
Manila Envelope Cuttings	2.00	@	2.10
Ex. No. 1 Manila	1.55	@	1.65
Print Manila	.90	@	1.00
Folded News (oversisue)	.60	@	.70
Old Newspapers—			
No. 1	.65	@	.70
No. 2	.60	@	.65
Mixed Papers—			
No. 1	.70	@	.80
Roofing Stocks—			
(F. o. b. Chicago, net cash)			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper

(F. o. b. Mill)

Bonds	.07	@	.40
Ledgers	.11	@	.40
Writings—			
Superfine	.13	@	.18
Extra fine	—	@	.22
Fine	.20	@	.26½
Fine, No. 2	.16	@	.25
Fine, No. 3	.12	@	.20
Book, M. F.	.06¾	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.11	@	.16
Coated Lithograph	.09	@	.12
Label	.09	@	.12
News	.03¾	@	.04
No. 1 Jute Manila	.09½	@	—
Manila Sul., No. 1	.04½	@	.06
Manila, No. 2	.04	@	.04½
No. 2 Kraft	.05	@	.05¼
No. 1 Kraft	.06	@	.06¾
Common Bogus	.02¾	@	—
Straw Board	60.00	@	65.00
News Board	47.50	@	50.00
Chip Board	42.50	@	45.00
Wood Pulp Board	4.50	@	5.00
(Carload Lots)			
Binder Boards—			
No. 1, per ton	85.00	@	90.00
No. 2, per ton	70.00	@	75.00
Carload lots	60.00	@	65.00
Tarred Felts—			
Regular	66.00	@	68.00
Slaters	70.00	@	72.00
Best Tarred, 1-ply (per roll)	1.85	@	1.95
Best Tarred, 2-ply (per roll)	1.55	@	1.70
Best Tarred, 3-ply	2.10	@	2.15
No. 1 Mixed Paper	.65	@	.70

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.11½	@	.12
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.07½	@	.08
Black Silesia, soft	.05	@	.05½
New Unbleached	.10½	@	.11
Washable	.04	@	.04½
Fancy	.05½	@	.06
Cottons—according to grades—			
Blue Overall	.07½	@	.08
New Blue	—	@	.04
New Black Soft	.05½	@	.06
New Light Seconds	.03	@	.03½
Khaki Cuttings	.04½	@	.05
Corduroy	.03	@	.03¼
New Canvas	.08	@	.09½
New Black Mixed	.05	@	.05½

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.75	@	2.00
Domestic	1.75	@	2.00
Manila Rope	3.50	@	4.00
Sisal Rope	1.25	@	2.00
Mixed Rope	1.10	@	1.25
Scrap Burlaps	1.50	@	1.75
Wool Tares, heavy	3.00	@	3.50
Mixed Strings	1.25	@	1.35
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	—	@	2.50

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	3.50	@	3.60
No. 2 Hard White	3.00	@	3.25
No. 1 Soft White	2.75	@	3.00
No. 2 Soft White	1.90	@	2.00
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	1.90	@	2.00
Writing Paper	1.65	@	1.75
No. 1 Books, heavy	1.25	@	1.30
No. 2 Books, light	.85	@	.90
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	1.15	@	1.20
Container Manila	.90	@	1.00
Old Kraft	2.00	@	2.20
Common Paper	.60	@	.65
No. 1 Mixed Paper	.65	@	.80
Straw Board, Chip	.70	@	.80
Binders Board, Chip	.70	@	.80
Overissue News	.80	@	.90
Old Newspaper	.65	@	.70

Domestic Rags (Old)

White, No. 1—			
Repacked	4.50	@	5.25
Miscellaneous	3.50	@	4.00
White, No. 2—			
Repacked	.02¼	@	.02¾
Miscellaneous	.02	@	.02¼
Thirds and Blues—			
Repacked	2.50	@	2.75
Miscellaneous	1.60	@	1.75
Black Stockings	3.50	@	3.75
Roofing Stock—			
No. 1	1.75	@	1.80

BOSTON

Paper

(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.15
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11½
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.07	@	.20
Superfines	.11	@	.31
News	.03½	@	.04
Book, Super	.06	@	.09
Book, M. F.	.05¾	@	.08½
Book, Coated	.08½	@	.20
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.05¾	@	.06½
No. 2 Kraft	.04¾	@	.05¾
Common Bogus	.02	@	.02½
Delivered New England points			
Straw Board, rolls .009			57.50
Straw Board in Sheets, basis 35s to 70s			53.50
Filled News Board			50.00
Chip Board			47.50
Single Manila Pulp lined board	57.50	@	62.50
Single White, patent coated board bender	75.00	@	82.50
Wood Pulp Board	80.00	@	85.00
Binder Boards	70.00	@	75.00
(F. o. b. Mill)			
Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.75	@	3.10
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	2.60	@	—
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	1.95	@	2.00
No. 1 Books, Heavy	1.35	@	1.45
No. 1 Books, Light	—	@	1.15
Manila Env. Cuttings	2.00	@	2.25
No. 1 Old Manila	1.40	@	1.60
White Blank News	1.75	@	—
Old Kraft	2.00	@	2.20
Print Manila	.70	@	.80
No. 1 Mixed Paper	.55	@	.62½
Overissue News	.70	@	.80
Old Newspapers	.65	@	—
Box Board, Chip	.65	@	—

Bagging

(Price f. o. b. Boston)

Gunny No. 1—			
Foreign	1.75	@	1.85
Domestic	1.75	@	1.85
Manila Rope and Strings—			
Foreign	3.50	@	3.75
Domestic	4.00	@	4.25
Mixed Strings	1.00	@	—
Scrap Burlaps	1.65	@	1.75
Wool Tares, heavy	1.75	@	1.85
New Burlap Cutting	2.25	@	2.37½

Domestic Rags (New)

(Price f. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.12½	@	—
Silesias, No. 1	.07	@	.07½
New Unbleached	.10	@	.10½
Fancy	.05¾	@	.06
Washable	.04½	@	—
Cottons—Acording to Grades—Blue—			
Blue Overalls	.07½	@	—
New Black, soft	.04	@	.04¼
Khaki Cuttings	.04¾	@	.05¼
Corduroy	.03	@	.03½
New Canvas	.08½	@	.09½

Domestic Rags (Old)

(Price f. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	5.50	@	5.75
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Thirds and Blues—			
Repacked	2.00	@	2.12½
Miscellaneous	1.75	@	1.90
Roofing Stock—			
No. 1	1.60	@	—
No. 2	1.40	@	—
No. 3	1.00	@	—
No. 4	1.00	@	1.10

Foreign Rags

(F. o. b. Boston)

Dark Cottons	1.60	@	1.65
New No. 1 Shirt Cuttings	11.00	@	11.50
Dutch Blues	2.00	@	—
Lace Curtains	5.50	@	—
New Checks & Blues	4.50	@	4.65
Old Fustians	1.80	@	—

TORONTO

Paper

(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¾	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
News f. o. b. Mills—			
Rolls (carloads)	3.25	@	—
Sheets (carloads)	3.75	@	—
Sheets (2 tons or over)	4.00	@	—
Book—			
No. 1 M. F. (carloads)	7.75	@	—
No. 2 M. F. (carloads)	7.50	@	—
No. 3 M. F. (carloads)	7.25	@	—
No. 1 S. C. (carloads)	8.25	@	—
No. 2 S. C. (carloads)	8.00	@	—
No. 3 S. C. (carloads)	7.75	@	—
No. 1 Coated and Litho	14.50	@	—
No. 2 Coated and Litho	13.50	@	—
No. 3 Coated and Litho	12.75	@	—
Coated tinted	.15	@	—
Wrapping—			
Rag Brown	4.85	@	—
White Rag	5.25	@	—
"B" Manila	5.65	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft, M. F.	7.20	@	—
M. G.	7.35	@	—

Pulp

(F. o. b. Mill)

Ground wood	25.00	@	28.00
Sulphite easy bleaching	58.00	@	61.00
Sulphite news grade	55.00	@	58.00
Sulphite, bleached	75.00	@	—
Sulphate	65.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	3.00	@	—
White Blk, News	1.50	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.25	@	—
Light and Crumpled Book Stock	1.10	@	—
Ledgers and Writings	1.40	@	—
Solid Ledgers	1.40	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.80	@	—
Strictly Folded	.47½	@	.52½
No. 1 Mixed Paper	.60	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.12	@	.12½
Fancy Shirt Cuttings	.06	@	.06½

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IF YOU are open to overtures for new connection, and qualified for a salary between $2,500 and $25,000, your response to this announcement is invited. The undersigned provides a thoroughly organized service, of recognized standing and reputation, through which preliminaries are negotiated confidentially for positions of the calibre indicated. The procedure is individualized to each client's personal requirements; your identity covered and present position protected. Established seventeen years. Send only name and address for details. R. W. Bixby, Inc., 117 Downtown Building, Buffalo, New York. tf.

WANTED—Assistant foreman, for coating mill in New England. Prefer man familiar with glazed papers. Give details of experience, age, salary expected in first letter. Address, Box 27-660, care Paper Trade Journal. N-10

WANTED—Experienced draftsman and machine designer, schooled on pulp and paper mill machinery equipment. State experience, previous connections, and education. Apply Ryther & Pringle Co., Carthage, N. Y. N-17

$3,000.00-$30,000.00 men find our Service effective in making connections. Individual. Confidential. Personally planned by JACOB PENN. All mill owners know him, believe in him. Not agency. Jacob Penn, Incorporated, 9 Park Place, New York. tf.

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SUPERINTENDENT—Experienced in the manufacture of folding box board. Require a reliable and experienced man. Give full information and experience in reply. Address, Box 27-711, care Paper Trade Journal. N-24

WANTED

An experienced man to handle paper mill office. Give complete details as to age, experience, salary expected, and reference in first letter.

Address, Box 27-703, care Paper Trade Journal. N-24

HELP WANTED

WANTED—First-class millwright. Must understand filling Jordans and beater rolls. Flower City Tissue Mills, Rochester, N. Y. N-10

WANTED—Machine tenders on cylinder tissue machine with pick-up felt. Steady work; no lost time. Address, Box 27-699, care Paper Trade Journal. N-24

WANTED—By paper board mill in Ohio, a machine tender for seven cylinder board machine. Desire a man thoroughly familiar with running combination boards. Address, Box 27-678, care Paper Trade Journal. N-10

WANTED AT ONCE—Experienced beater engineer with past record of successful performance, to take charge of beater room in a two-machine board mill in Northern Wisconsin. Must be acquainted with and able to apply modern methods. Address, Box 27-689, care Paper Trade Journal. N-17

NEWS PRINT MILL MAN seeks contact with salesmen of news print for contract business. Correspondence confidential. Address, Box 27-693, care Paper Trade Journal. N-10

WANTED—Chemist to act as assistant to technical engineer in large board mill in Northern Wisconsin. Paper mill experience preferred. Address, Box 27-702, care Paper Trade Journal. N-24

TOUR BOSS—Two machine mill making folding box board. Mill located in an eastern city. Address, Box 27-704, care Paper Trade Journal. N-17

BOARD SALESMAN—Must be acquainted with the New York corrugators. Address, Box 27-710, care Paper Trade Journal. N-10

WANTED—Salesman for product of Middle Western Mill making book papers and specialties. Preferably one favorably known to Middle Western Jobbing Trade. Address, Box 27-713, care Paper Trade Journal. N-10

WANTED—A technically trained man who is experienced in paper mill operation. Must be alert and active. In applying give references, state experience, age, and salary expected. Address, Box 27-714, care Paper Trade Journal. D-1

WANTED

Man who is experienced and capable of running a finishing department. This must combine knowledge of operating embossing machines, Seybold Cutters, and handling women labor. This is a good position for the right man, but unless you are qualified, please do not apply.

Address, Box 27-692, care Paper Trade Journal. N-10

SITUATIONS WANTED

SALES OR SERVICE MAN of paper mill supplies by a practical paper maker who has had selling experience and knows all departments of the mill. Address, Box 27-645, care Paper Trade Journal. N-10

SUPERINTENDENT with 15 years experience on high test container and combination board desires position. Have excellent record for quality and production and can furnish the best of references. Address, Box 27-648, care Paper Trade Journal. N-17

FELT SUPERINTENDENT—Ten years with representative mill making dry felt and flooring. Desires change. Capable of getting production and quality. Best references. Address, Box 27-523, care Paper Trade Journal. tf.

ASSISTANT SUPERINTENDENT — College graduate, chemist, nine years practical experience and research in rag fine writing papermaking and specialties, desires position with opportunity for advancement. Address, Box 27-320, care Paper Trade Journal. tf.

SUPERINTENDENT—Open for position October 1st. Book, bond, writing, waxing, hanging, board and other grades. Can handle help and get results. Go anywhere. Address, Box 27-586, care Paper Trade Journal. N-10

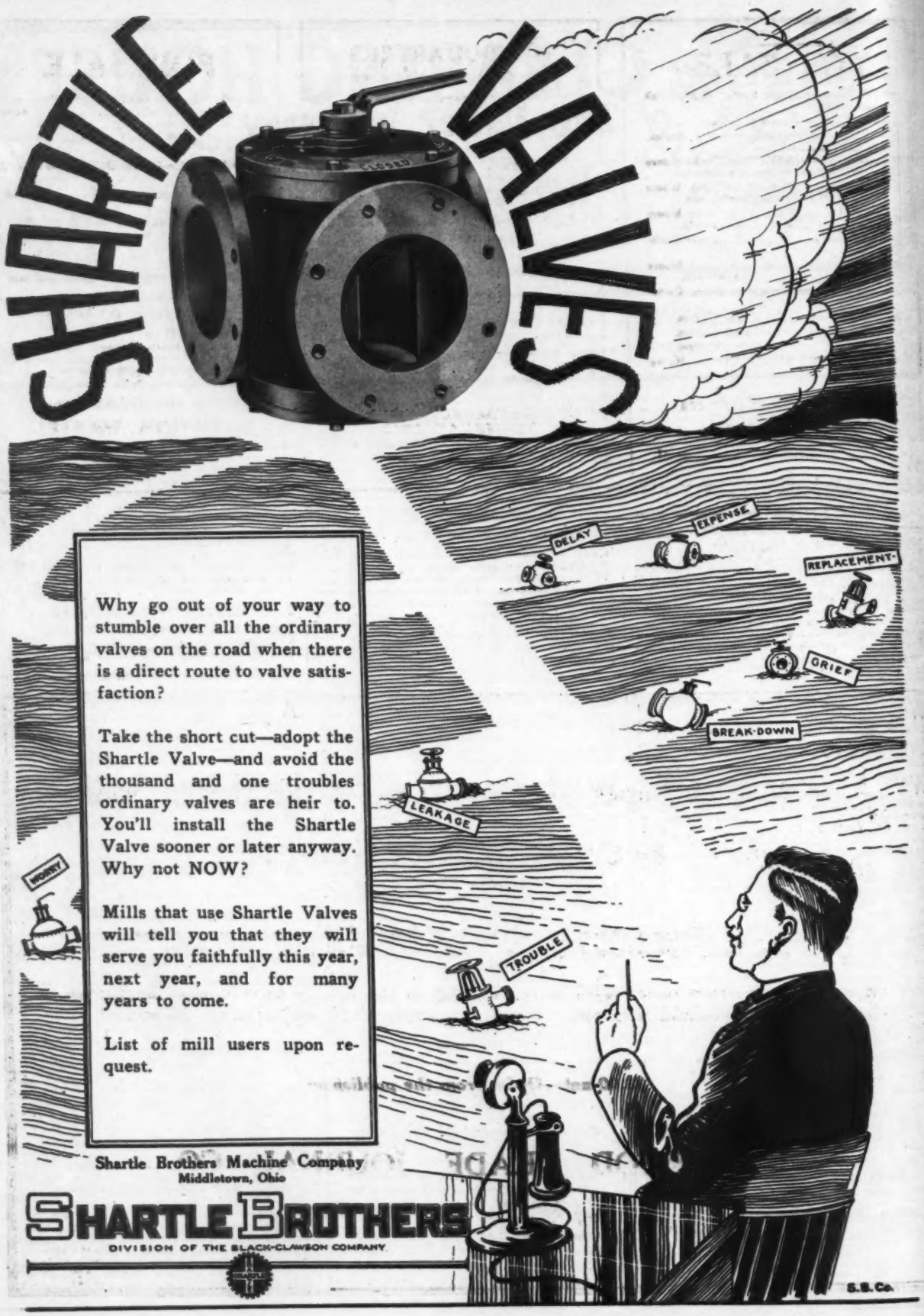
A REAL GOOD BOSS BEATERMAN wants steady work in good mill. Expert colorman, 25 years experience on all grades, from tissues to boards. Used to full control and responsibility of beater room. Good references. State offers. Address, Box 27-696, care Paper Trade Journal. N-17

FINISHING ROOM SUPERINTENDENT wants position. Familiar with finishing various kinds bleached and unbleached paper, also Kraft, news; practical experience with operation of rotary and press cutters and all operations pertaining to finishing and shipping. Can handle help and run department efficiently. Married. Address, Box 27-682, care Paper Trade Journal. N-17

MACHINE TENDER—30 years of age, married, steady. Well up on all grades of box boards and container. Can furnish excellent reference. Can get maximum results from machine. Available at once. Address, Box 27-676, care Paper Trade Journal. N-10

POSITION WANTED—By man who has had eighteen years experience in the manufacture of all kinds of board. Good at production, maintenance, and initiative ability. Best of references furnished. Address, Box 27-677, care Paper Trade Journal. N-10

MILL CONNECTION WANTED—Capable experienced salesman desires mill connection. Years of experience in the sales of both coarse and fine paper. Willing to travel. Highest credentials as to ability and integrity. Address, Box 27-490, care Paper Trade Journal. tf.



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Mills that use Shartle Valves will tell you that they will serve you faithfully this year, next year, and for many years to come.

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DIVISION OF THE BLACK-CLAWSON COMPANY

FOR SALE

1—72" Hamblet Single Cutter with 24 roll back stand.
1—84" Beloit heavy duty duplex.
1—84" Black-Clawson heavy duty duplex, with duplex slitter.
1—52" Moore & White Cutter with Moore & White Layboy and Backstands.
1—48" Moore & White Cutter with Moore & White Layboy and Backstands.
1—42" Moore & White Cutter with Moore & White Layboy and Backstands.
1—60" Hamblet Cutter with 10 roll Backstands.
1—110" Moore & White Cutter with Moore & White Layboy and Backstands.
1—82" Heavy duty Hamblet Single Cutter with 24 roll Backstands.
2—58" Moore & White Single Cutters.
4—54" Moore & White Single Cutters.
6—48" Moore & White Single Cutters.
1—57" Hamblet Duplex Cutter, Heavy Duty.

The Shartle Brothers Machine Co.,
Middletown, Ohio tf.

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6—4' x 30' American Process.
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1—Swenson Triple Effect, 1,750 sq. ft.
2—Swenson Triple Effect, 3,300 sq. ft.

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2—4' x 6' Oliver.
2—4' x 6' Oliver, Acid Proof.
1—8' x 8' Oliver, Acid Proof.

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Several Chippers.
Four deck Beloit frames. These are modern and extra heavy.
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One Farrel Roll Grinder.
One No. 2 Lannoye Pulper.
One 61" Holyoke Super-Calender.

The Shartle Brothers Machine Company
Middletown, Ohio tf.

SITUATIONS WANTED

SALES—Graduate chemical engineer, 5 years experience in technical control of pulp and paper manufacture, wishes to enter the sales organization of a concern supplying raw materials or equipment to the industry. Address, Box 27-717, care Paper Trade Journal. N-24

FACTORY MANAGER or assistant in paper bag and specialty factory. Experienced in every branch of the business. Address, Box 27-631, care Paper Trade Journal. D-1

HELP WANTED

PAPER MILL machinery designer wanted. State experience, salary expected. Address, Box 27-718, care Paper Trade Journal. tf.

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PULP AND PAPER CHEMIST desires new connection in Canada with opportunity of advancement. Experience in pulp and paper trade and research. University degrees. References. At present engaged. Address, Box 27-651, care Paper Trade Journal. N-24

POSITION WANTED as ground wood superintendent or tour foreman. Experienced on all grades of pulp. Best of references. Address, Box 27-666, care Paper Trade Journal. N-10

WANTED—Position as superintendent or foreman of mill making binders, leather and other boards. Middle-aged man. Good at construction and repairs. Address, Box 27-668, care Paper Trade Journal. N-10

POSITION WANTED—Superintendent or foreman; chip board or wrapper mill. Experienced at construction and remodeling. Eastern states preferred. Address, Box 27-669, care Paper Trade Journal. N-10

MILL OR PRODUCTION MANAGER—Now superintendent of a well known mill, but want to make a change. A splendid business and paper making experience with an excellent production record. Well educated. Address, Box 27-501, care Paper Trade Journal. N-17

SUPERINTENDENT—Trained in the manufacture of box board specialties, tag and coating mill boards, can guarantee quality, production, efficiency, and good organizer. Address, Box 27-593, care Paper Trade Journal. tf.

SUPERINTENDENT—Trained in the manufacture of tissues, all grades, plain and creped; high grade Kraft papers, converting specialties, crepes, waxing, crepe towels, and Kraft, waxed Kraft. Address, Box 27-563, care Paper Trade Journal. N-10

PAPER MILL ELECTRICIAN—Age 25 years, 6 years experience on electrical drives. Prefer position as chief or assistant chief electrician. Can handle men; reference furnished. Address, Box 27-698, care Paper Trade Journal. N-10

AGENCY desired by established sales engineer New York District. Very successful selling to paper manufacturers. Address, Box 27-663, care Paper Trade Journal. N-17

CREDIT MANAGER — EXECUTIVE, ACCOUNTANT. Highly efficient, age 38, married, 15 years diversified experience. At present Assistant Treasurer large paper concern. Seeks connection with progressive company in executive capacity. Charles Endrich, care Coy, Hunt & Co., 77 W. Houston St., New York City. N-10

MAN with twenty years experience in fine and coarse paper jobbing house, thoroughly experienced as house-salesman, sample department, estimating, etc. Also warehouse experience. Reference. "G. W. M.," 3304 West 98th Street, Cleveland, Ohio. N-17

SUPERINTENDENT—Experienced in all grades of box board, container, liner, test stock, etc. Can produce quality and production. A-1 on repairs and handle help successfully. Will go anywhere. Best of references. Address, Box 27-705, care Paper Trade Journal. D-1

PRACTICAL PAPER MAKER, with 20 years experience on all grades combination and container boards, desires position as assistant superintendent, tour boss, or night superintendent. Can furnish the very best of references. Address, Box 27-706, care Paper Trade Journal. N-24

SUPERINTENDENT open for engagement. Used to book, envelope, waxing, crepe, tissue, and all specialties. Good color man. Understand all makes of machine. Address, Box 27-707, care Paper Trade Journal. N-10

PRACTICAL rewinder and embosser foreman would like to make change. Several years experience on different grades of papers, including waxed and glazed. Good reference. Address Box 27-712, care Paper Trade Journal. N-24

SITUATIONS WANTED

BOSS FINISHER—Desires position; 15 years experience in 5 very good mills; single and duplex cutters, layboys, rewinders, press cutters. Grades: news, wrapping, tissue, specialties (bond, book, writing, bristol and tag). Married. References A-1. Address, Box 27-715, care Paper Trade Journal. N-17

BOSS BEATERMAN OR BEATER ENGINEER—Experienced on most all grades. 40 years of age. Goon on colors. References. Address, Box 27-716, care Paper Trade Journal. N-24

PULP AND PAPER MILL ENGINEER, technical graduate, 12 years experience on methods of reducing costs, desires change. Build, remodel, or rearrange; full responsibility. Address, Box 27-667, care Paper Trade Journal. N-10

SUPERINTENDENT—30 years experience on all grades news and Kraft papers. Can give best of references; also can report at once. Address, Box 27-670, care Paper Trade Journal. N-17

WANTED—Position as assistant superintendent, night or tour boss. Would consider running machine with opportunity for advancement. Age 40, married. Familiar with all types of machines. A-1 reference. Address, Box 27-603, care Paper Trade Journal. N-10

MISCELLANEOUS

SEND YOUR ODD LOT LIST of coarse and fine papers together with samples to Goldman Paper & Paper Stock Co., 414 So. Front Street, Philadelphia, Pa. tf.

WANTED—Mill ends and job lots in rolls or flats in any quantity, all grades. Also boards. Joseph Goldstein & Sons, 1302-9 N. Halsted Street, Chicago, Illinois. tf.

CLARK MANUFACTURING COMPANY, Holyoke, Mass. Telephone 1828. Builders of cylinder moulds, couch and felt rolls, dandy rolls. We cover dandies and cylinders tight, for fast running machines. 3-5-27

WANTED—Side or odd lot rolls ten to ninety pound basis. The larger the quantity the better we like it. Address, Box 27-481, care Paper Trade Journal. tf

PAPER MILL CONNECTION WANTED—Jobbing company with established trade in allied lines wants connection with manufacturers; one for wrapping paper and one for twine, and paper bags. Operating in North Jersey. If product is good and price right a good business is assured, but the connection must be direct and the prices right. Write: GREAT NOTCH SALES CORP., Passaic, N. J. N-10

MILL ACCOUNTS WANTED consisting of Kraft, parchment and paper bags, by New York City selling agent. Address, Box 27-709, care Paper Trade Journal. N-10

GOVERNMENT BIDS

TREASURY DEPARTMENT, Bureau of Engraving and Printing, Washington, D. C., November 7, 1927.—Sealed proposals are invited for the purchase of pulp during the last six months of the fiscal year beginning July 1, 1927. Proposals to be received not later than 2 p.m., Monday, November 28, 1927. Blank forms with specifications for proposals and further information will be furnished on application to A. W. HALL, Director. N-17

WANTED

WANTED—2 W. & P. Pulpers, 2 Filter Presses and 1 Rogers Wet Machine. Address, Box 27-285, care Paper Trade Journal. tf.

WANTED—Rewinder to handle sheet not less than 50" or more than 72" wide. Address, Box 27-671, care Paper Trade Journal. tf.

WANTED—One Mammoth Junior Jordan, first-class condition. North Star Strawboard Mills, Quincy, Illinois. N-10

WANTED—Three Deck Dryer Frames; must be heavy. Address, Box 27-708, care Paper Trade Journal. N-10

WANTED

WANTED TO BUY—Special Lots, or overruns—all grades of paper. Lutz Paper Co., 17 E. 42nd Street, New York City e.o.w.12/31/27

WANTED—Embossing machines with and without printing attachment, also the engraved embossed rolls for embossing and printing glazed and fancy papers. Address, Box 27-624, care Paper Trade Journal. O-13, 27; N-10

FOR SALE

FOR SALE—Barber roll making machine, practically new. Address, Box 27-629, care Paper Trade Journal. N-10

FOR SALE—Second-hand 1200 lb. wood tub N. & W. beater. In good condition. The Noble & Wood Machine Co., Hoosick Falls, N. Y tf

FOR SALE—6 No. 3 Moore & White Speed Changes suitable for driving sheet cutters. Apply to Warren Manufacturing Company, Milford, N. J. N-17

FOR SALE—One slightly used 36" Beck Sheeter, perfect condition; also 2 Roller Embossers, 27 and 29". Blair Tool Co., College Point, L. I. N-10

FOR SALE—One Four Bowl Railroad Duster. One Cylinder Mould 30 inches diameter, 65 inches face. Three small 125 volt Direct Current Lighting Generators. The above equipment all in a first-class condition. Write or apply ot The Shenandoah Boxboard Corporation, Winchester, Va. N-10

FOR SALE—Two Friction Calenders, 34 inch rolls, made by Textile Finishing Machinery Co. Cheap if taken at once. Address, Box 27-625, care Paper Trade Journal. O-13, 27; N-10

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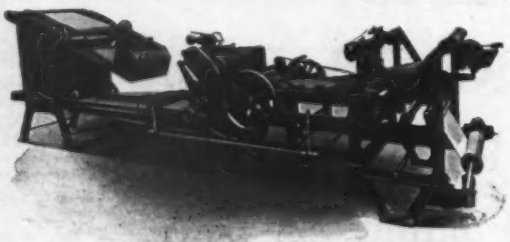

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VALUATIONS

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Bleached Soda Pulp
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Samples and Prices upon application

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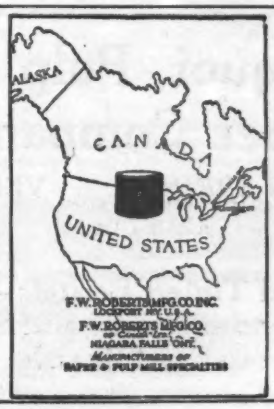

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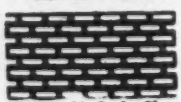

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SHELDON SPRINGS VERMONT
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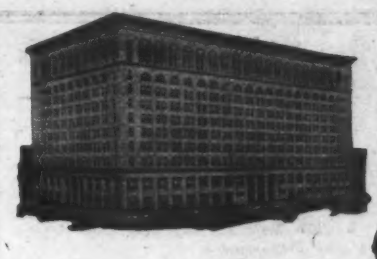
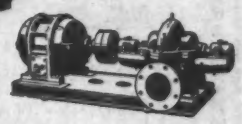


Economy Pumps that have been used in Wanamaker's Philadelphia store for 20 years consist of four 3" and two 2½" horizontal centrifugal pumps connected direct to electric motors. They are used for air washer circulation handling dirty gritty water.



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Think of it! 20 years—without a single major repair, and still operating with their original runners, as noiselessly as the day they were installed.

These Economy Pumps, an essential part of the air purification system in the Wanamaker Store, are typical examples of the durability and efficiency that has won the esteem of building engineers the world over. All Economy Pumps are equal to the duties required of them. They have been constantly improved and simplified in design for higher efficiencies. They are carefully manufactured of the finest materials. Above all, they are correctly applied, for Economy engineers, who have had wide experience with pumping problems, offer their cooperation free to all Economy users.

When it is a pump you need—sump pump, vacuum pump, condensation pump, or whatever kind—talk your problem over with an Economy man. We have illustrated booklets giving all necessary data. Send for yours.

Economy Pumping Machinery Company
3431 West 48th Place, Chicago
Representatives in Principal Cities—Telephone & address under Economy Pumping Machinery Co.

Economy Pumps

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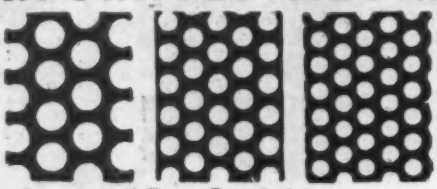

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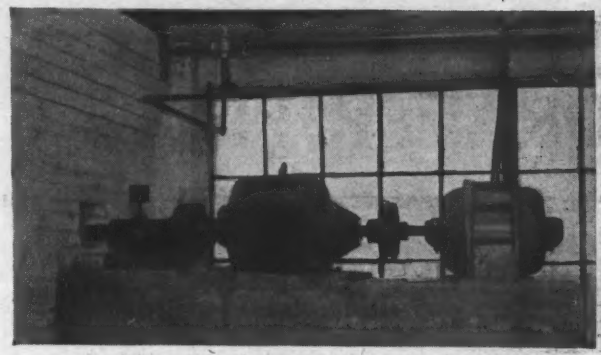

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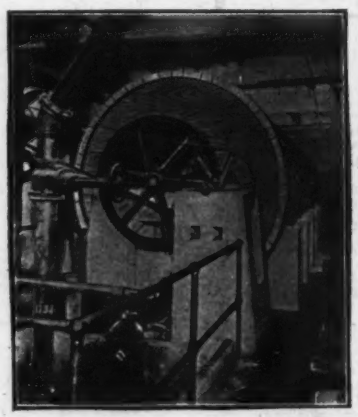

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